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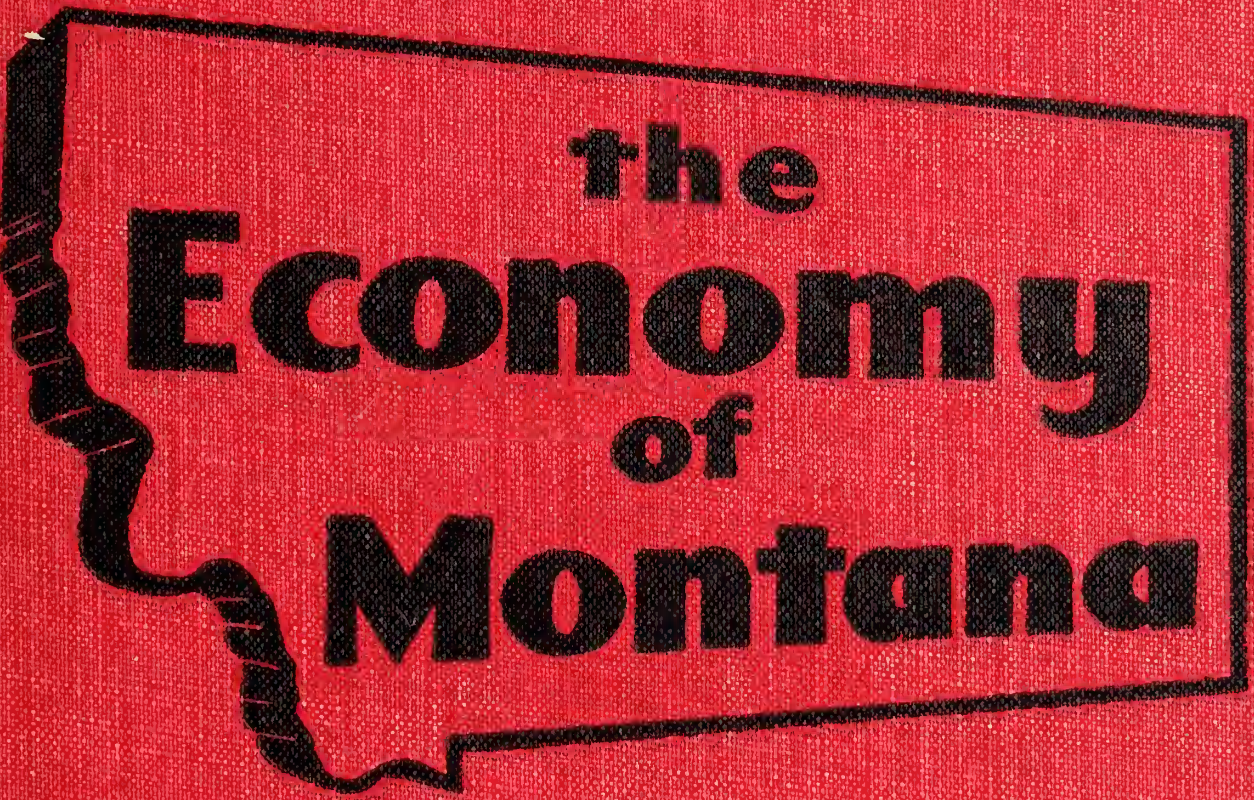

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THE ECONOMY OF MONTANA

By

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and

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December
1951

PART ONE OF

Unemployment Insurance in Montana

Bureau of Business and Economic Research
School of Business Administration
Montana State University
Missoula, Montana

in cooperation with

Unemployment Compensation Commission
Helena, Montana

Part Two, **Benefit Financing,** is published by the Unemployment Compensation Commission

Preface

"The Economy of Montana" is the principal contribution of the Bureau of Business and Economic Research to a study which was begun in November 1950 in cooperation with the Unemployment Compensation Commission of Montana.

The cooperative study was undertaken as a description and analysis of the employment situation and the operation of the unemployment insurance system in the state. The purpose was to furnish a basis for determining the actuarial soundness of the unemployment insurance structure over the next decade. An actuarially sound structure is one which embodies a proper relationship among benefit disbursements, payroll tax rates, and reserves.

It was clear that a description and analysis of the economic structure of Montana was an essential part of the study. This is because the probable future level of unemployment insurance costs depends in large part upon the nature of the state's economy. The Bureau of Business and Economic Research undertook this phase of the project. In making the economic study, particular emphasis was placed upon employment and the factors which contribute to stability and instability of employment and income.

The undersigned director of the Bureau of Business and Economic Research had general responsibility for and supervision of "The Economy of Montana." Chief credit for the research and writing belongs to Mrs. Maxine Johnson, Research Associate, who prepared most of the chapters. She also participated in the planning and direction of the study. The Bureau director wrote the chapter on the mining industry, and he and Mrs. Johnson collaborated on the introductory chapter.

The vast amount of work involved in the calculation of seasonal variation of employment in the various industrial classifications was planned and carried forward by Guy C. Gifford, Instructor in Business Administration, and Mrs. Elizabeth M. Smith, formerly Instructor in Mathematics. Mrs. Smith made the April 1950 labor force estimates, and she and Mrs. Johnson worked together on the annual estimates of labor force, employment, and unemployment. Mrs. Smith also is responsible for the graphic presentation of Montana business indexes in Chapter I.

The study was made possible by the financial support of the Unemployment Compensation Commission of Montana. We also wish to acknowledge the active cooperation and assistance of Mr. M. Joe Miller, Chairman of the Commission, and his staff, principally Fred C. Gilbert, Michael A. Murphy, and Charles H. Draper.

The assistance of numerous state and federal agencies, business firms, and individuals, who furnished information and made suggestions for the interpretation of factual data, is gratefully acknowledged. We are indebted also to the experts in various fields to whom parts of the manuscript were submitted for comments and criticism.

Dr. Michael T. Wermel, Chief of the Financial and Actuarial Branch, Bureau of Employment Security, U. S. Department of Labor, was the principal source of intellectual stimulation. His cooperation in planning the study, and his technical guidance and assistance at several stages were of incalculable value.

This study represents the first attempt at anything like a comprehensive description and appraisal of the economy of Montana. Errors and omissions probably are inevitable. The results are offered as a pioneering effort, with the hope that some contribution has been made to a better understanding of the economic structure of the "Treasure State."

Harold J. Hoflich, Director
Bureau of Business and Economic Research

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Missoula, Montana
December 1951

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I. Introduction

Montana is the third largest state in the union, exceeded in size only by Texas and California. Its total area comprises 147,148 square miles, or approximately 94 million acres. Within this territory live 591,024 people,[1] or an average of four persons per square mile. Only two states, Wyoming and Nevada, have less population density.

The Rocky Mountains, a chain from 100 to 200 miles wide embracing several ranges, cross Montana, dividing the state into two geographic and economic areas.

Western Montana, comprising roughly one-third of the state, is a mountainous area, heavily forested, with vast mineral resources and fertile mountain valleys. Its industries are based upon its lumber, mineral, and agricultural resources. Butte, center of the state's copper mining industry, is located in western Montana, as is Missoula, the fourth largest city. Lumbering is important in the area and the valleys are the scene of extensive diversified farming, much of it irrigated, where livestock, feed grains, dairy products, poultry, fruit, and sugar beets are produced. Similarities in geographic characteristics, resources, and economic activity, as well as a tradition of westward movement, have brought about close ties with the states lying to the west and have contributed to the integration of western Montana as a part of the Pacific Northwest.

To the east of the Continental Divide lies the greater portion of the state, approximately two-thirds of the total area, which is a part of the Great Plains region. Most accurately described as a huge plateau, its elevation drops gradually eastward toward the Dakotas. Several mountain formations and extensive rolling hills are found in the area. Agriculture is the chief economic activity in eastern Montana, although it is generally less diversified than in the western part of the state. Smaller and less dependable water supplies have resulted in a greater dependence upon non-irrigated farming and the production of wheat and cattle. As western Montana is tied to the Pacific Northwest states, so eastern Montana, both historically and economically, is related to the Great Plains area adjoining it. Its record of agricultural ups and downs affecting the entire economy and its unprecedented prosperity during the past decade have been paralleled in the other Plains states.

Eastern Montana has extensive lignite and sub-bituminous coal beds, largely undeveloped, and oil and natural gas fields. It boasts a growing oil refining business and two of the state's largest cities, Great Falls and Billings, leading wholesale and retail trade centers in Montana. Billings is also an important railroad center.

HIGHLIGHTS OF THE ECONOMY

Montana is primarily a producer of foodstuffs and raw materials, and its population still is predominantly rural. Only 43.7 percent of its people were living in urban areas (cities and towns of more than 2,500 population) in 1950, as compared to nearly 64 percent for the nation.

Distribution of the Employed Labor Force

The nature of the Montana economy is reflected in the distribution of employment in the state. Nearly 40 percent of the employed labor force was engaged in the primary industries, agriculture and mining, in 1940, as compared to approximately 21 percent in the entire country.[1] Conversely, Montana had about 12 percent employed in the secondary industries, manufacturing and construction, while the country as a whole had 28 percent. As is typical of young economies, manufacturing activity in Montana is based preponderantly upon the initial processing of the products of farms, forests, and mines. In Montana 47 percent and in the United States nearly 50 percent of the employed labor force was in the tertiary industries, including trade, service, transportation, communication, other utilities, finance, and government, in 1940.

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[1] As of April 1, 1950.

Income Payments

Total income payments to individuals in Montana have followed the national pattern quite closely since 1929. The income data shown in Chart 1 indicate that the depression drop of the thirties was somewhat more severe in Montana than in the United States, but that the state recovered more rapidly than did the nation. In 1949, a poor crop year in Montana, the drop in income payments was again more pronounced than in the United States.

Chart 2, showing major sources of income payments in Montana and the United States, casts light upon the variance in the income patterns of the two areas. Agriculture is the principal source of income in Montana, and is much more volatile than in the nation as a whole, ranging from 15.1 to 35.0 percent of total income payments since 1929. The fluctuations in agricultural income and the heavy dependence upon agriculture are salient features of the Montana economy and a principal cause of economic instability.

The trade and service industries are the second ranking source of income payments in Montana, and have exceeded agriculture in years of poor crops or depressed prices. Government payrolls and other government payments rank third in importance. Manufacturing payrolls are a poor fourth, constituting only 6.2 percent of total income payments in 1950.

For the nation as a whole, trade and service has been the principal income source with a slightly higher percentage of the total than in Montana. The relative positions of manufacturing and agriculture afford the chief contrast between the two areas. In the nation manufacturing payrolls have consistently ranked a close second and in 1950 gave rise to 22.6 percent of total income payments, compared to 6.2 in Montana. Agricultural income, on the other hand, is of less significance and constituted only 7.5 percent of nationwide income payments in 1950 compared to 29.5 percent in Montana.

Wages and salaries constitute the single most important type of income payment in the state, having ranged from 46.7 to 64.6 percent of total payments during the past twenty years. As shown in Table 1, wages and salaries are relatively less important in Montana than in the United States as a whole. In years when Montana's income payments to farm operators decline, wages and salaries assume a relatively more important position. Largest wage and salary payments in Montana are derived from trade, government, transportation, and manufacturing.

Net income to proprietors of unincorporated businesses ranks second to wages and salaries in Montana, amounting to from 16.5 to 40.0

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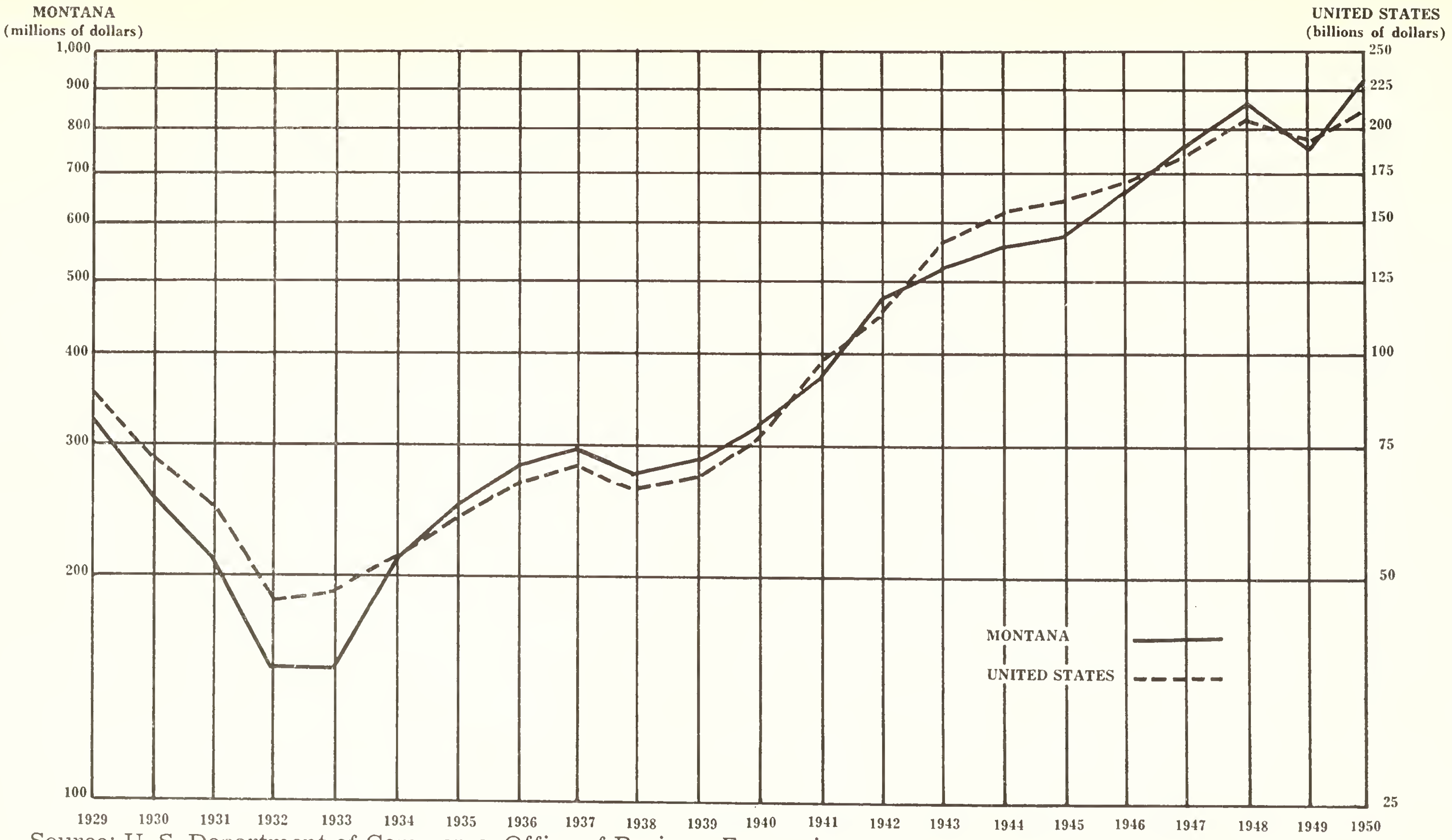
[1] See Chart 11 and footnote 1, page 23, which explains employment classification.

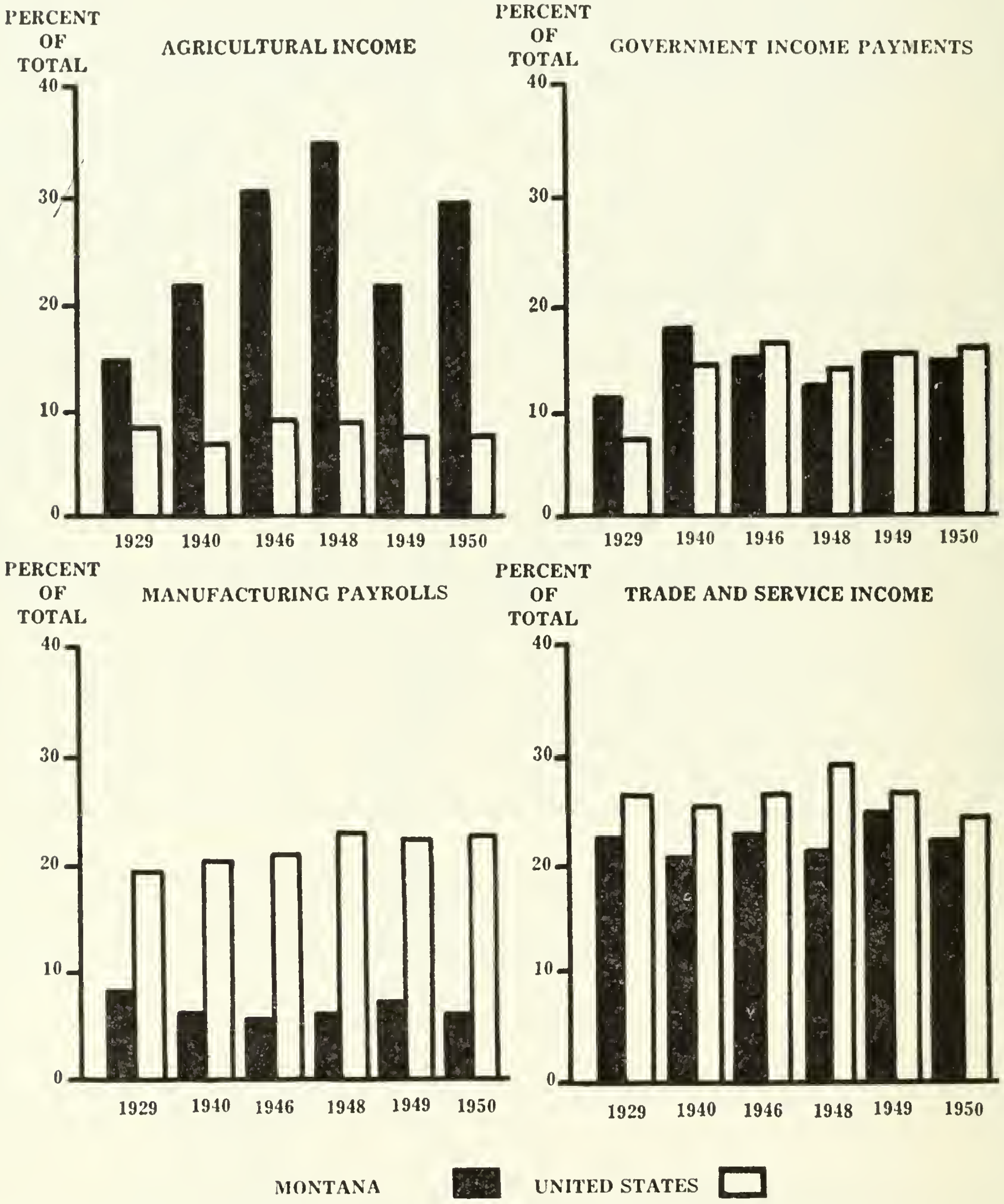
Chart 1
TOTAL INCOME PAYMENTS TO INDIVIDUALS, MONTANA AND THE UNITED STATES, 1929-1950
(Ratio Scale)



Source: U. S. Department of Commerce, Office of Business Economics.

Chart 2

MAJOR SOURCES OF INCOME PAYMENTS TO INDIVIDUALS, SELECTED COMPONENTS AS PERCENT OF TOTAL, MONTANA AND THE UNITED STATES, SELECTED YEARS, 1929-1950



Source: U. S. Department of Commerce, Office of Business Economics.

percent of total income since 1929. Proprietors' income in the entire nation is relatively less important, ranging from 14.3 to 20.8 percent of the total. This is explained largely by the influence of agricultural income in Montana, where payments to farm operators have ranged between 46.9 and 75.5 percent of all proprietors' income.[1] Property income

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[1] Calculated from data furnished by the U. S. Department of Commerce, Office of Business Economics.

Table 1

TOTAL INCOME PAYMENTS TO INDIVIDUALS, EACH TYPE AS PERCENT OF TOTAL, MONTANA AND THE UNITED STATES, 1929-1950

	— Montana —					— United States —					
Year	Wages and Salaries	Proprietors' Income	Property Income	Other Income	Total	Wages and Salaries	Proprietors' Income	Property Income	Other Income	Total	Mont. as % of U.S. Total
1929	63.7	24.3	10.2	1.8	100.0	63.5	16.7	18.5	1.3	100.0	.39
1933	64.6	16.5	10.8	8.2	100.0	61.7	14.3	18.9	5.1	100.0	.34
1939	59.0	22.9	8.7	9.4	100.0	62.1	15.5	15.6	6.7	100.0	.41
1940	56.4	26.2	9.3	8.1	100.0	63.3	15.6	14.9	6.2	100.0	.42
1941	52.7	33.3	7.5	6.5	100.0	65.0	17.1	13.3	4.6	100.0	.40
1942	50.6	37.3	7.6	4.4	100.0	66.5	18.9	11.0	3.6	100.0	.40
1943	49.9	38.4	7.5	4.1	100.0	68.0	18.3	9.7	4.1	100.0	.37
1944	48.7	37.7	7.7	5.9	100.0	66.2	18.3	9.4	6.1	100.0	.36
1945	47.3	36.8	8.1	7.8	100.0	63.1	19.1	9.6	8.2	100.0	.37
1946	47.2	37.8	8.4	6.6	100.0	61.5	20.8	10.2	7.4	100.0	.39
1947	46.7	40.0	8.0	5.3	100.0	64.1	19.1	10.4	6.5	100.0	.43
1948	48.1	39.5	8.0	4.4	100.0	64.9	19.1	10.3	5.7	100.0	.43
1949	57.0	27.9	9.6	5.5	100.0	66.4	16.2	11.0	6.4	100.0	.40
1950	49.3	35.9	9.0	5.8	100.0	65.2	16.7	11.1	7.0	100.0	.44

Source: U. S. Department of Commerce, Office of Business Economics.

in Montana ranges from 7.5 to 10.8 percent of the total, as compared to 9.4 to 18.9 percent in the United States. This segment consists of dividends, interest, net rents, and royalties, and is relatively less significant in Montana because of the lack of large corporate enterprise and financial centers and the prevalence of smaller, individually-owned, family-type enterprises.

Per Capita Income Payments

In general, areas with little manufacturing tend to have a lower per capita income than highly industrialized areas. This was true in Montana from 1929 through 1941, when per capita income was below that for the United States for every year except 1940. Since 1942, however, Montana's per capita income has exceeded the national average, and in 1948 ranked fifth among all the states, due largely to the great increase in agricultural prosperity and its influence upon the rest of the state's economy. The 1950 per capita income was estimated at $1,605 for Montana, about 12 percent higher than the estimate of $1,436 for the United States. (See Chart 3.) In 1950 Montana ranked tenth among the states.

Since 1934, Montana's per capita income has ranked either second or third among the eight Mountain states. Minnesota, the Dakotas, and other Plains states have lower per capita incomes, while the Pacific Coast states typically exceed Montana. These differences in income are important factors in the in-and out-migration of Montana's population.

Other Business Indicators

In addition to the estimates of income payments to individuals, the pattern of which is discussed above, there exist at least five other series of economic data for 1935 through 1950 by which the pace of Montana's economy may be compared with that of the United States. These series are bank debits, department and general store sales, freight carloadings, electric power consumption by commercial and industrial establishments, and cash receipts from farm marketings. They have been charted without adjustment for seasonal variation and visual comparison of the state and national patterns is possible. (See Charts 4-8.)

In spite of the fact that Montana's economy differs greatly from that of the country as a whole, cyclical fluctuations in the state bear a marked resemblance to those of the nation. This similarity is in large part a reflection of the interdependence of the national and state economies. Those rather small variations which have occurred are in large part attributable to the influence of agriculture and agricultural income, which during the drought of the thirties added to depressed conditions and in later, prosperous years was a major factor in the increase in business activity.

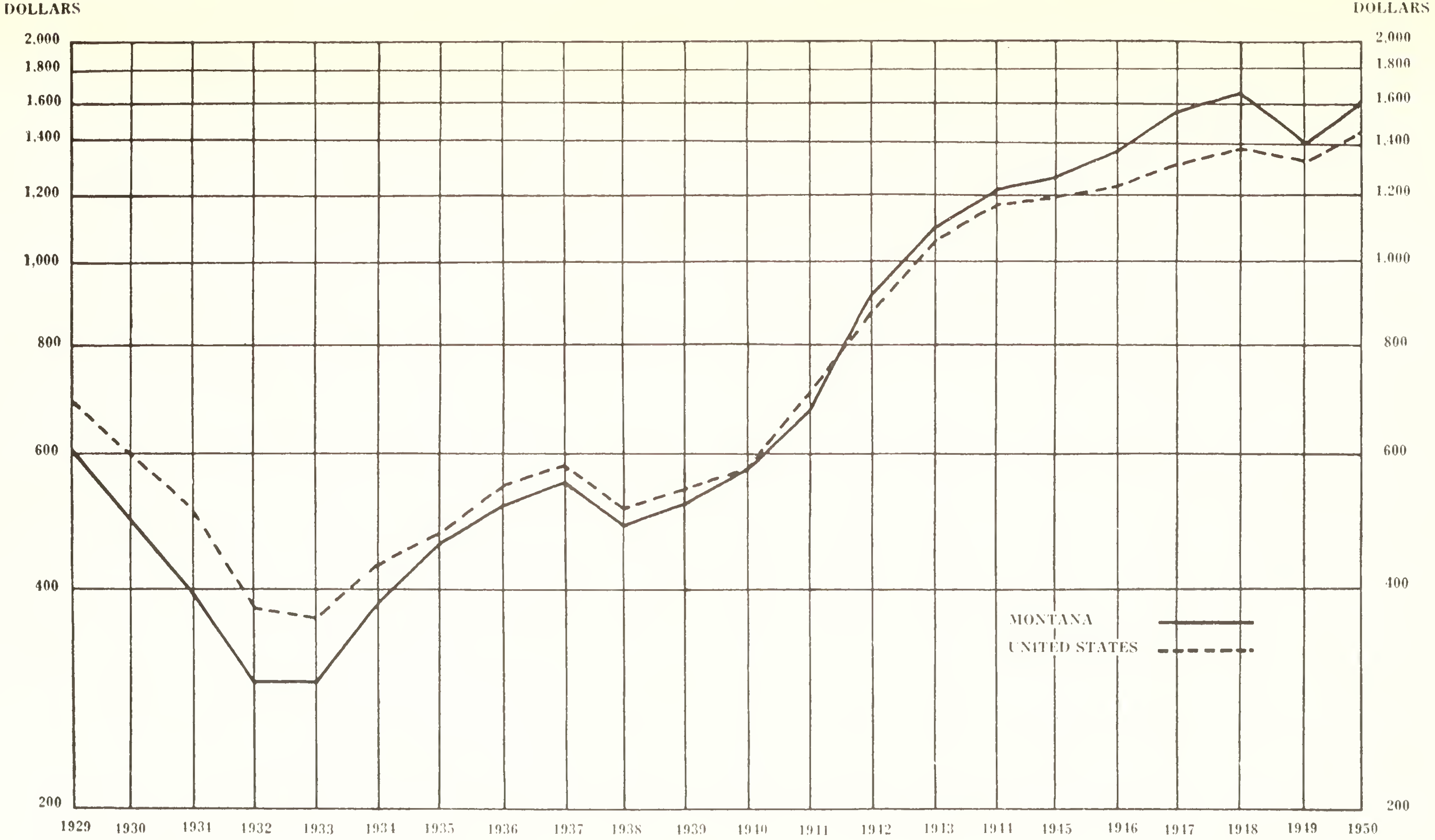
Seasonally, Montana tends to differ from the United States, both in timing and in amplitude of fluctuations. Here again the influence of agriculture is evident, as a major determinant of both the timing and the fluctuations. Bank debits and carloadings reach their peak in October as agricultural products are marketed, and general store sales generally reflect the pattern of farm purchases.

In the chapters which follow, the economic structure of Montana is described and analyzed in a more detailed fashion. Attention is focused particularly upon those factors which contribute to stability and instability of employment and income.

Chart 3

PER CAPITA INCOME PAYMENTS, MONTANA AND THE UNITED STATES, 1929-1950

(Ratio Scale)



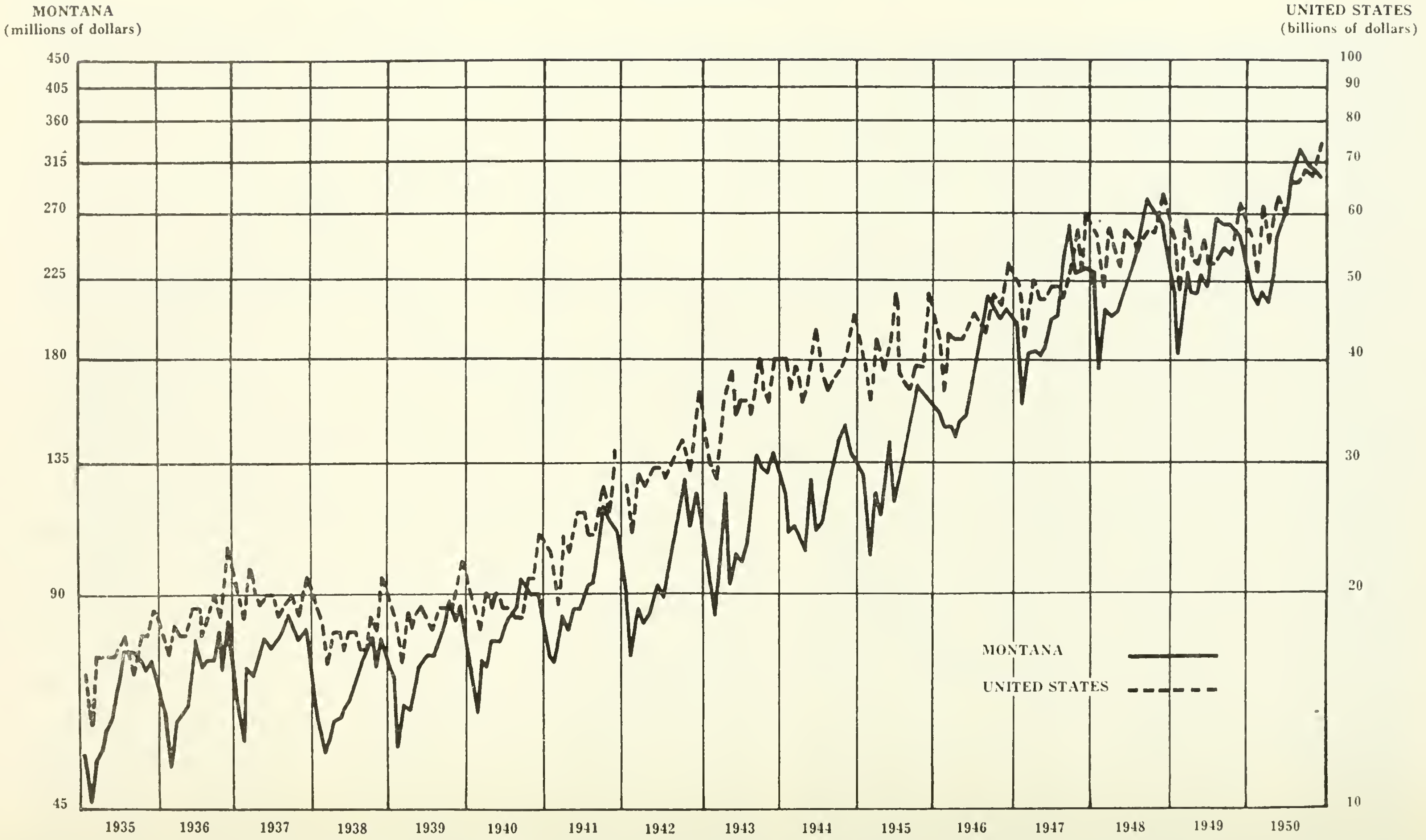
Note: Continental United States only.

Source: U. S. Department of Commerce, Office of Business Economics.

Chart 4

MONTHLY BANK DEBITS, MONTANA AND THE UNITED STATES, 1935-1950

(Ratio Scale)



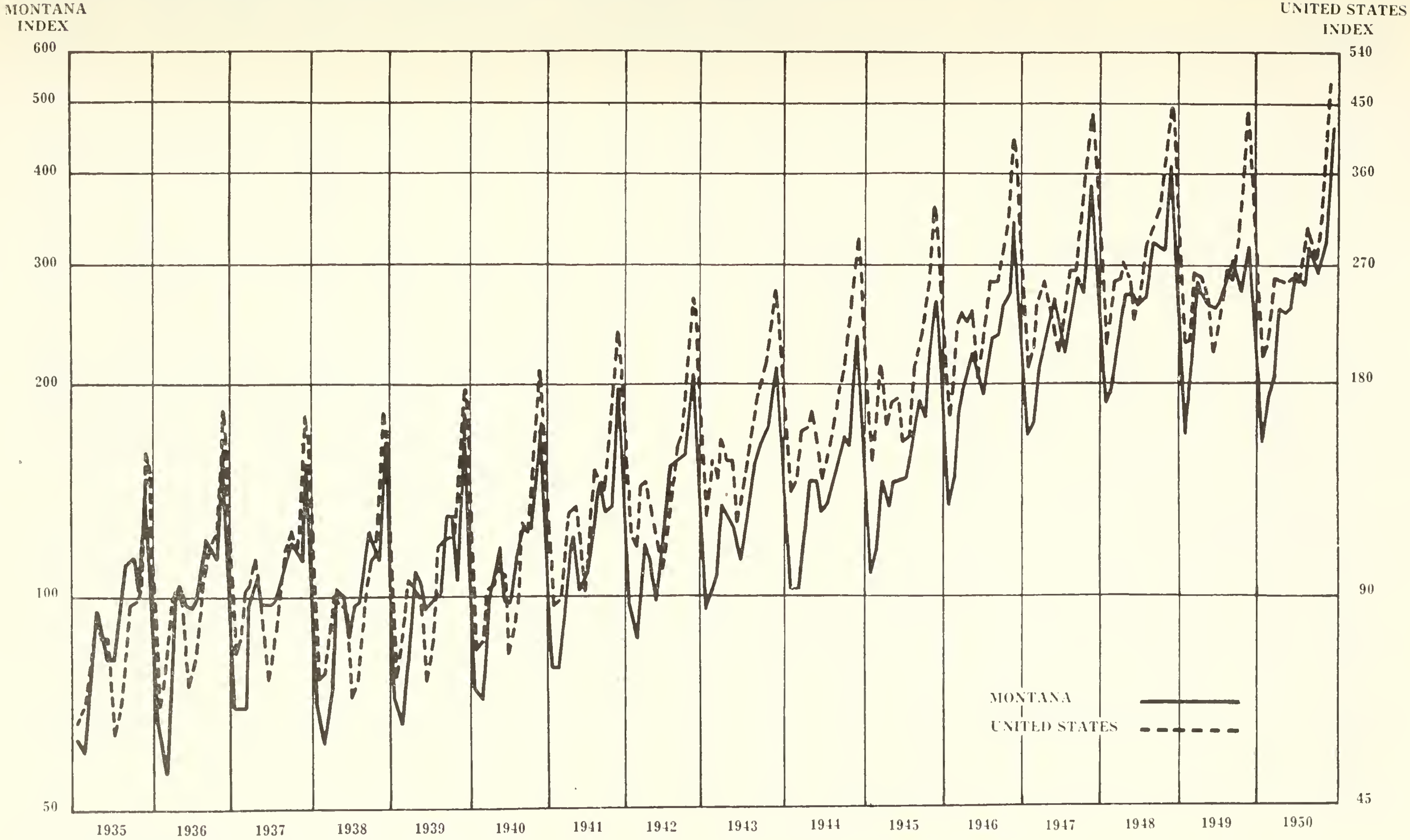
Note: Unadjusted for seasonal variation. Montana data include bank debits of banks in 16 communities. United States data include bank debits in 140 banking centers, excluding New York City. Figures for the United States from January 1942 not strictly comparable with earlier data because of inclusion of additional reporting banks.

Sources: Federal Reserve Bank of Minneapolis and Board of Governors of the Federal Reserve System.

Chart 5

MONTHLY INDEXES OF GENERAL AND DEPARTMENT STORE SALES IN MONTANA AND THE UNITED STATES, 1935-1950

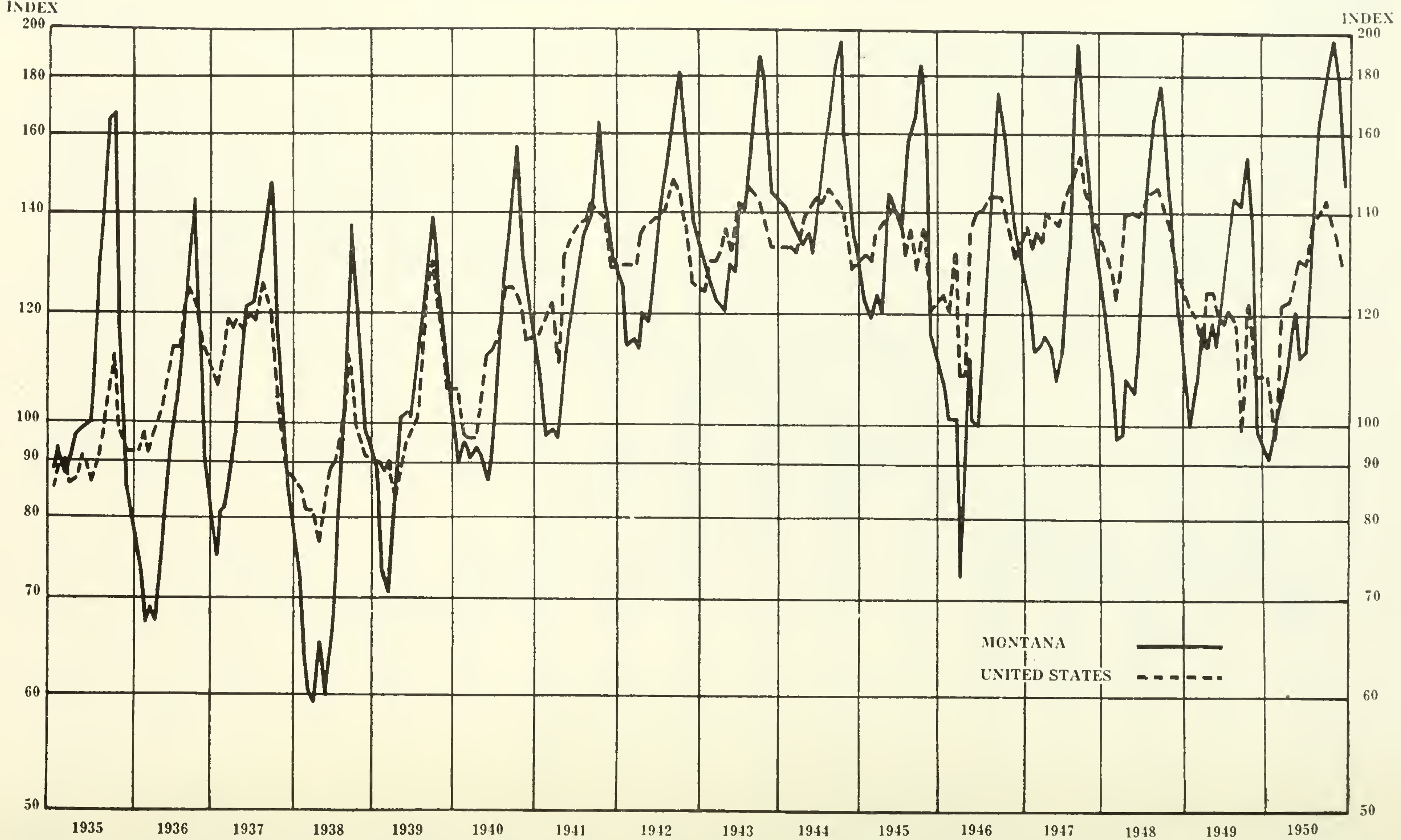
(Ratio Scale) (1935-1939=100)



Note: Unadjusted for seasonal variation.

Sources: Bureau of Business and Economic Research, Montana State University, based on data from the Federal Reserve Bank of Minneapolis; Board of Governors of the Federal Reserve System.

Chart 6 MONTHLY INDEXES OF FREIGHT CARLOADINGS, MONTANA AND THE UNITED STATES, 1935-1950
(Ratio Scale) (1935-1939=100)



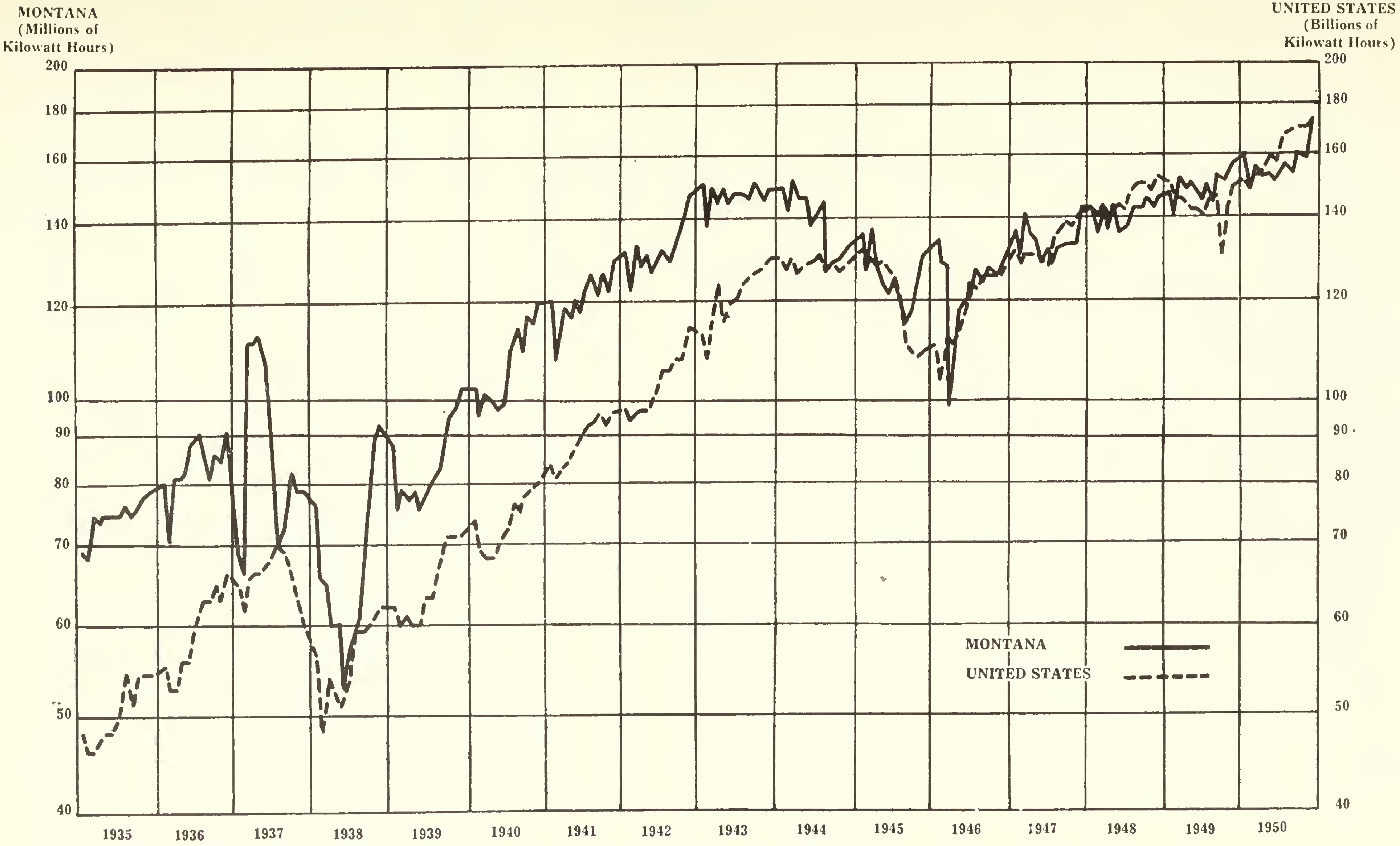
Note: Unadjusted for seasonal variation.

Sources: Bureau of Business and Economic Research, Montana State University, based on data from Montana Board of Railroad Commissioners; Board of Governors of the Federal Reserve System.

Chart 7

MONTHLY COMMERCIAL AND INDUSTRIAL POWER CONSUMPTION, MONTANA AND THE UNITED STATES, 1935-1950

(Ratio Scale)



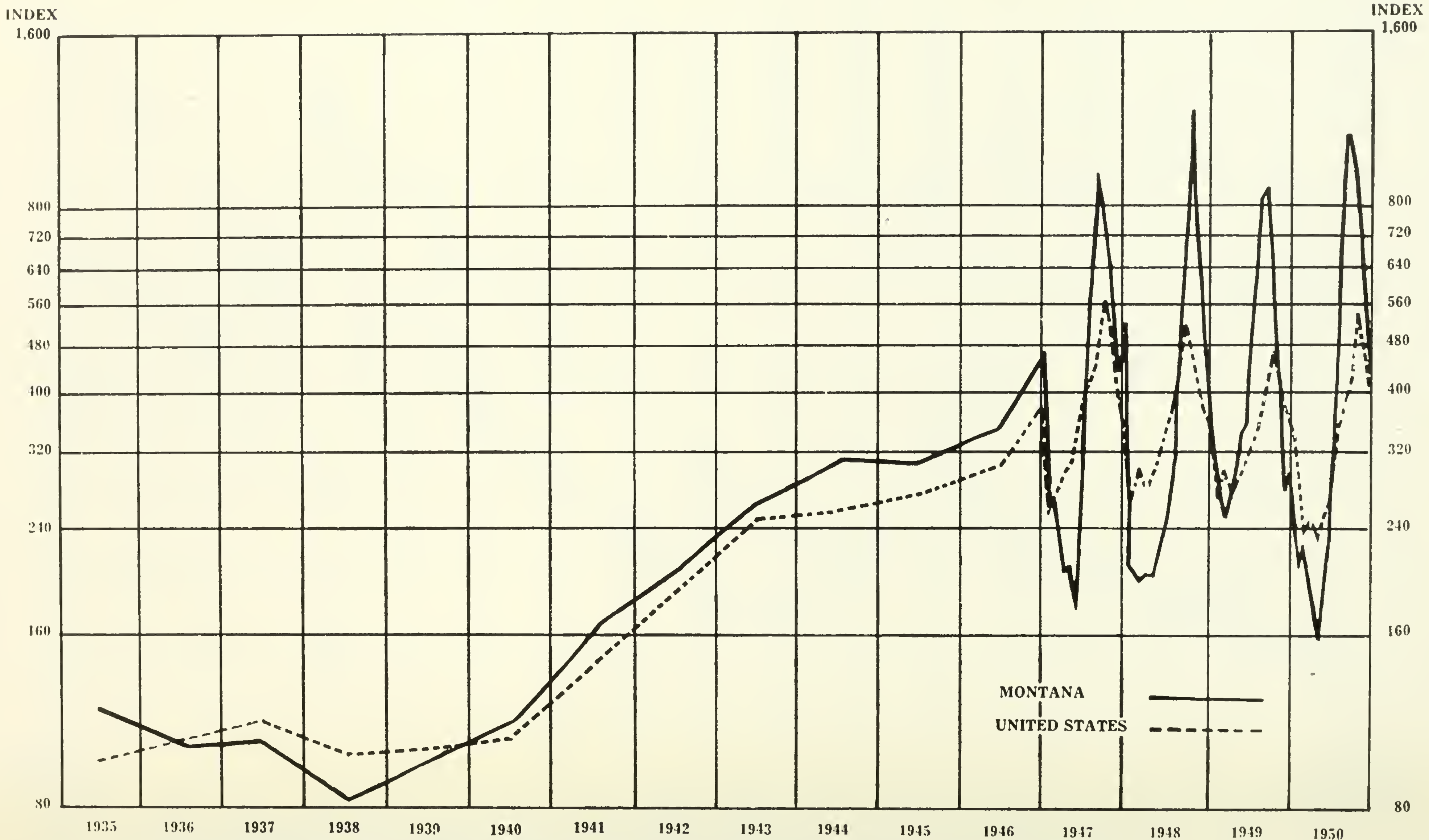
Note: Unadjusted for seasonal variation.

Sources: Bureau of Business and Economic Research, Montana State University, and Edison Electric Institute.

Chart 8

INDEXES OF CASH RECEIPTS FROM FARM MARKETINGS, MONTANA AND THE UNITED STATES, 1935-1950

(Ratio Scale) (1935-1939=100)



Note: Annual data, 1935-1946; monthly data, unadjusted for seasonal variation, 1947-1950.
Source: U. S. Department of Agriculture, Bureau of Agricultural Economics.

II. Population

The number, composition, and geographic distribution of the population of an area have a vital bearing on its economic development. A rapidly growing population, in general, results in increases in the demand for and production of goods and services of all kinds. To meet these demands, industries must be expanded and new ones created.

A changing population also has a direct effect on labor force, both as to the availability of labor and the capacity to expand production, as well as the ability of the population as a whole to consume the goods and services produced.

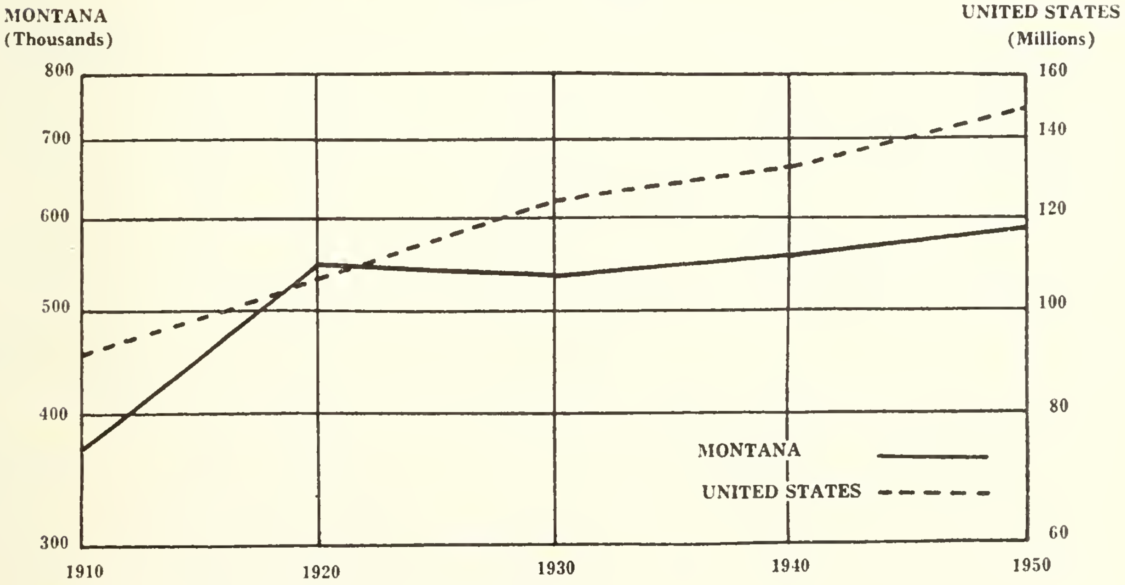
Growth of Population in Montana

Montana's population grew rapidly from 1860 until 1920, as fur traders, missionaries, miners, stockmen, and homesteaders in turn were attracted to the state. During the decade of the twenties, however, the upward trend in Montana's population was reversed. The opening of additional land for homesteading between 1910 and 1920 was in a sense the end of the frontier era of the state and the last great impetus for population growth through in-migration. Following the pattern of other western states, Montana's population had enjoyed spectacular gains in the latter part of the 19th and early part of the 20th century. After 1920, however, while most other western states continued their rapid rate of growth, Montana failed to do much more than maintain its 1920 numbers. In the 30-year period from 1920 to 1950, the total increase in population for Montana was 7.7 percent. Total national increase during the same period was 42.6 percent. Between the 1920 and 1930 censuses, Montana was the only state in the union to lose population. Its net loss amounted to 2.1 percent, while United States population gained 16.1 percent. Since 1930, Montana has enjoyed small increases in population, 4.1 percent between 1930 and 1940 and 5.6 percent between 1940 and 1950.

Chart 9

POPULATION CHANGES IN MONTANA AND THE UNITED STATES, BY DECADES, 1910-1950

(Ratio Scale)



Source: U. S. Bureau of the Census.

The Problem of Out-Migration

Two factors determine changes in population for any given area: the rate of natural increase (excess of births over deaths) and migration to and from the area. Because death rates are fairly constant, the number of births assumes more significance in determining the rate of natural increase. Since 1929, the excess of births over deaths in Montana has exceeded the national rate.

With a rate of natural increase greater than the national average and a rate of population growth less than the national average, it is evident that migration must be an important factor in Montana's population trends. Americans have always been a relatively mobile people, moving from one section of the country to another with freedom. In 1940, 22.5 percent of the people of the United States were living in states other than those of their birth. Montanans, however, appear to have a higher mobility than the average. In 1940, 36.4 percent of all persons born in Montana were living in other states, and 46.3 percent of the population in Montana had been born elsewhere.

A study of annual population figures and rates of natural increase since 1922, when these figures were first available for Montana, indicates that out-migration of residents has long been a characteristic of the state. Between 1920 and 1930, a series of low rainfall years and depressed prices ended the agricultural boom and resulted in many farms and ranches being abandoned, their residents moving into Montana's towns and cities, or in many cases out of the state, usually farther west, in search of new opportunities. The state's urban communities gained about 9,000 persons, but the loss in rural areas amounted to 20,000. Interestingly, this movement out of Montana fell off during 1933, 1934, and 1935 and increased during the more prosperous years which followed. An estimated 57,000 persons moved out of the state between 1935 and 1940, while another 46,000 moved into Montana from other states, resulting in a net loss of 11,000 by interstate migration. In the widespread emphasis upon the out-migration of Montana's population, the importance of in-migration to the state may easily be overlooked.

It is frequently pointed out that shifts in population have an economic basis. There appears to be a definite relationship between the movement of population into and out of Montana and the income of the respective states concerned. In general, states with higher per capita incomes than the average for the western region draw Montana's population and states with lower than average for the region furnish Montana with a substantial amount of population. Washington, Oregon, and California, generally higher income states than Montana, attracted the bulk of the out-migrants during the five-year period from 1935 to 1940. The largest percentage of persons moving into Montana came from the Dakotas and other North Central states with lower per capita incomes. Of the other Mountain states, only Idaho attracted a sizable number of Montanans. Table 2 gives net movements of population between Montana and surrounding areas from 1935 to 1940.

Population movements in Montana were intensified during the decade of the forties. As it became evident that war production centers on the Pacific Coast offered wider and more remunerative employment opportunities, thousands of the state's residents were attracted to those centers. Many others entered the armed services. According to intercensal

Table 2

MOVEMENT OF POPULATION BETWEEN MONTANA AND THE WEST NORTH CENTRAL, MOUNTAIN, AND PACIFIC COAST STATES, 1935-1940

Region and State	Net Gain for Montana
West North Central, Total	+12,170
North Dakota	+ 7,190
South Dakota	+ 1,899
Nebraska	+ 1,166
Other[1]	+ 1,915

Region and State	Net Gain or Loss for Montana
Mountain, Total	— 1,757
Idahc	— 2,104
Other[2]	+ 347

Region and State	Net Loss for Montana
Pacific Coast, Total	—20,927
Washington	— 8,976
California	— 7,911
Oregon	— 4,040

Net loss to above areas: 10,514

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[1] Includes Iowa, Kansas, Minnesota, and Missouri.

[2] Includes Arizona, Colorado, Nevada, New Mexico, Utah, and Wyoming.

Source: U. S. Bureau of the Census.

Table 3

TOTAL POPULATION OF MONTANA, 1940-1950[1]

Year	Population (thousands)	Actual Change (thousands)	Percent Change
1940	556		
1941	544	—12	—2.2
1942	522	—22	—4.0
1943	487	—35	—6.7
1944	462	—25	—5.1
1945	463	+ 1	+0.2
1946	495	+32	+6.9
1947	515	+20	+4.0
1948	535	+20	+3.9
1949	562	+27	+5.0
1950	591	+29	+5.2

---

[1] Preliminary figures as of July 1 each year (except 1950-April 1). Includes members of the armed forces stationed in Montana; excludes members of the armed forces overseas.

Source: U. S. Bureau of the Census.

estimates of the Bureau of the Census, between 1940 and 1944, when the population reached its lowest point in three decades, Montana suffered a net loss of 94,000 citizens, or 16.9 percent of its 1940 population. This figure represents by far the largest loss of any Mountain state during that period. Beginning in 1945, Montana began to gain back the population which it had lost. From then until 1950, 129,000 persons were added to Montana's population to give the state a net gain of 5.6 percent for the decade. Many persons returned from other states as war plants curtailed their production or ceased to operate, others were released from the armed services, and the high postwar birth rate increased the rate of natural increase. The Census Bureau estimates, however, that the state lost a net of 40,000 persons through migration between 1940 and 1950. Of this total, 35,000 were civilians and the remainder members of the armed forces. No data are available which give information as to in-migration or originations and destinations of in- and out-migrations. It seems likely, however, that the pattern was similar to that of the thirties discussed above.

Many factors other than income enter into the characteristic mobility of Montana's population. The frontier influence was long predominant, and is still felt to some extent, and Montanans have developed a custom of mobility. The high percentage of young people and the preponderance of males in the early part of the century contributed to the ease of movement, and the speculative aspect of agriculture, particularly in non-irrigated farming, together with recurring droughts and agricultural depressions intensified the movement in the twenties. The lack of development of communities and community feeling, particularly in agricultural areas, has been both a result of and a factor in the mobility of the population, although this situation has improved in recent years.

Characteristics of the Population

The characteristics of a state's population, such as extent of urbanization, age, sex, and race, are significant in a study concerned with employment and benefit financing. A high degree of urbanization will mean a larger proportion of the labor force in nonagricultural work and thus in covered employment. A large percentage of older persons in the population may tend to increase claims for unemployment insurance. A declining percentage of males may result in a smaller labor force, depending upon the number of females working. Non-white workers frequently have more unemployment in proportion to their numbers than do whites; thus the racial composition is important.

The 1950 Census gives Montana a total population of 591,024. Of this total, 43.7 percent live in urban areas[1] while 56.3 percent are classified as rural, including both farm and nonfarm residents.[2] In 1920, only 31.3 percent of the population consisted of urban residents and 68.7 percent lived in rural areas. Over the 30-year period, urban population has increased 50 percent, while total rural population has declined 11.6 percent. All of the decline in rural population has taken place among farm residents; their numbers decreased 39.7 percent between 1920 and 1950 while the number of nonfarm residents increased 30 percent. (See Chart 10.)

Most Montana towns and cities have gained in numbers of residents during the past thirty years. A notable exception is Butte, with a decrease of 10.3 percent, apparently as a result of increased employment

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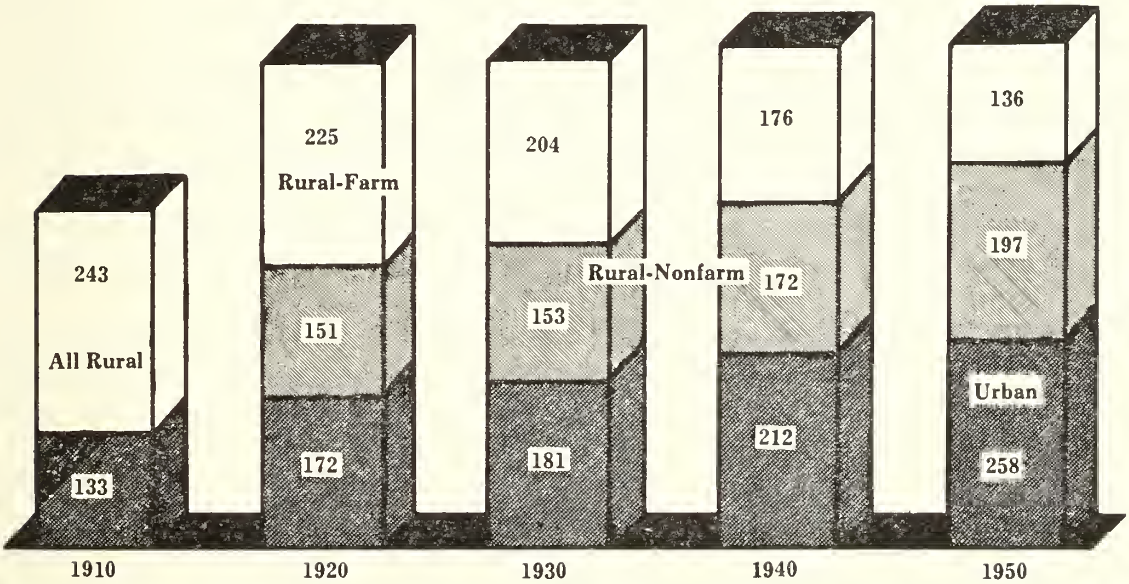
[1] Cities and towns of over 2,500 population.

[2] Nonfarm residents include those persons living in rural communities of less than 2,500 population, but not on farms.

Chart 10
DECADE CHANGES
IN MONTANA'S URBAN AND RURAL POPULATION, 1910-1950
(Thousands)



Note: Urban population includes all persons living in towns and cities of over 2,500.

Source: U. S. Bureau of the Census.

Table 4
DECADE CHANGES IN THE COMPOSITION OF THE POPULATION OF MONTANA BY SEX, 1910 - 1950

		Female		Male	
Year	Population	Number	Percent	Number	Percent
1910	376,053	149,181	39.7	226,872	60.3
1920	548,889	248,948	45.4	299,941	54.6
1930	537,606	244,378	45.4	293,228	54.5
1940	559,456	260,447	46.6	299,009	53.4
1950[1]	591,024	281,601	47.6	309,423	52.4

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[1] Preliminary.

Source: U. S. Bureau of the Census.

opportunities for work outside the mines in other communities. The 1950 Census gives Butte, in 1940 the largest city in the state, a population of 33,251, making it second in size to Great Falls, with 39,214, and followed by Billings (31,834) and Missoula (22,485). Nine other cities in the state had a population of over 5,000 in 1950.

In the early part of the century, Montana's population was characterized by its youth and by the predominance of males. Since 1910, however, the percentage of males has been declining and the population has been growing older. In 1950, 52.4 percent of Montana's citizens were males, compared to 60.3 percent in 1910 and 54.6 percent in 1920. However, Montana continued to have a higher ratio of men than the United States, with a percentage of 49.5.

From 1920 to 1950, the number of persons between the ages of 15 and 64 (the age groups from which most members of the labor force are drawn) increased 5.3 percent in Montana. Between 1940 and 1950, however, the number of persons between 15 and 64 years of age declined about 3 percent. The low birth rate of the thirties is reflected in the 1950 figures, with most of the decrease coming in the 15 to 24 age bracket. The same situation applies to the United States as a whole, with repercussions in the form of a reduced potential labor supply in both the state and the nation in the fifties as compared to the forties. The number of young persons under 14 years of age, however, has increased substantially (19.8 percent in Montana) during the past decade, reflecting the high birth rate of the war and postwar years and indicating that a larger labor force will be available in the future.

In 1920, 3.1 percent of Montana's population was 65 years of age or over; by 1950, the percentage had increased to 8.6 percent, slightly higher than for the United States (8.2 percent).

Montana has no large numbers of non-white citizens. Since 1920, the white population has averaged between 96 and 97 percent of the total. Indians constitute the largest non-white group, but in spite of the fact that their numbers have been increasing, they made up only three percent of the total population in 1940. Because Montana's Indians have generally been engaged in agricultural work, they have been an unimportant factor in unemployment compensation. Small numbers of Chinese, Japanese, and Negroes also reside in the state, but in 1940 their combined numbers amounted to only 0.4 percent of the total population. In 1950, only 3.2 percent of Montana's population consisted of non-white residents.

Table 5

AGE DISTRIBUTION OF THE POPULATION OF MONTANA, 1910-1950

	1910		1920		1930		1940		1950[1]	
Age Group	**Number**	**% of Total**	**Number**	**% of Total**	**Number**	**% of Total**	**Number**	**% of Total**	**Number**	**% of Total**
14 and under	102,188	27.2	178,773	32.6	159,651	29.7	141,895	25.4	170,032	28.8
15 - 24	73,011	19.4	82,513	15.0	93,888	17.5	102,414	18.3	82,352	13.9
25 - 44	137,074	36.5	184,707	33.7	156,357	29.1	157,357	28.1	170,122	28.8
45 - 64	51,824	13.8	84,151	15.3	100,673	18.7	121,533	21.7	117,634	19.9
65 and over	9,085	2.4	16,808	3.1	26,700	5.0	36,257	6.5	50,884	8.6
Unreported	2,871	.8	1,937	.4	337	.1	—	—	—	—
Total	376,053	100.0	548,889	100.0	537,606	100.0	559,456	100.0	591,024	100.0

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[1] Preliminary.

Source: U. S. Bureau of the Census.

III. Labor Force

Labor force is a broad term which refers to all those persons with jobs, including the self-employed, and all those available for work and looking for jobs. In order to understand the economy of any area a careful study of the labor force and its composition is necessary. Here difficulties are encountered because, although the labor force may be fairly stable for short periods of time, over longer periods it is constantly shifting in number and in composition. Changes are brought about by alterations in the demand for labor and in the composition, customs, and habits of the population. Increased job opportunities and attractive wage rates may bring additional persons into the labor force. Some workers engage in seasonal work only; this causes wide fluctuations in the size of the labor force over a year's time. Changes in the birth rate will bring about changes in the size of the working force within twenty or twenty-five years, as will changes in the population because of in- and out-migration. The growing emphasis on higher education and increased acceptance of women workers have also affected the size and composition of the labor force.

The state of economic development in an area is a major determinant of the size of the labor force. In its earliest stages, the economy of an area consists principally of primary industries such as agriculture, lumbering, and mining. As the area develops, some partial processing of raw materials is undertaken. As industrialization proceeds, more of the manufacturing process takes place locally. It is obvious that the development of secondary industries will give rise to additional job opportunities as more of the raw materials are used within the area instead of being shipped out to be manufactured elsewhere into producers' and consumers' goods. A manufacturing area can support a much larger population and labor force than a similar area which is simply producing raw materials and sending them to industrial areas for fabrication.

Growth of the Labor Force in Montana

Unfortunately, data on the labor force in Montana are limited to Census years with 1940 the latest year.[1] However, an estimate of the labor force in the state in April 1950 has been made, which places the figure at 246,400.[2] (See Table 6.)

Usually, changes in the size of the labor force follow changes in the population rather closely. This has been true since 1910 for the nation as a whole. Between 1910 and 1950, national civilian population increased 62.9 percent and the labor force 14 years of age and over 66.8

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[1] Prior to 1940, the Bureau of the Census reported "gainful workers" 10 years of age and over rather than labor force figures including all persons 14 years of age and over as now reported. In addition, industrial and occupational classifications were revised in many instances between 1930 and 1940; persons without previous work experience looking for jobs were counted in 1940, whereas many of these were not included in previous years; unemployed persons were included in industrial groups rather than classified separately prior to 1940, and all inmates of institutions, whether or not they did any "gainful" work were excluded for the first time in 1940. Differences in dates also offer difficulty in interpreting the figures. The 1910 Census was taken as of April 15; the 1920 was taken as of January 1, and the 1930 and 1940 Censuses as of April 1. These differences in collecting and presenting data are probably not of great significance for the total labor force figures and therefore do not render the totals noncomparable, with the possible exception of 1920, when the Census was taken as of January 1. In a state such as Montana where the seasonal aspect is important and January is one of the lowest months, the 1920 figures may be somewhat low. In view of these differences, care should be exercised in comparing classifications as to industrial groups within the labor force.

[2] See Appendix for method of estimating labor force in Montana in 1950.

Table 6

LABOR FORCE, MONTANA AND THE UNITED STATES, 1910-1950

Year	— Montana — (thousands) Population	Labor Force[1]	Percent of Population	Percent Increase	—United States — (millions) Population	Labor Force[1]	Percent of Population	Percent Increase
1910	376.0	178.2	47.4		92.0	37.3	40.5	
1920	548.9	213.8	39.0	20.0	105.7	41.2	39.0	10.5
1930	537.6	216.2	40.2	1.1	122.8	48.6	39.6	18.0
1940	559.5	225.0	40.2	4.1	131.7	52.8	40.1	8.6
1950	589.0[2]	246.4	41.8	9.5	149.9[2]	62.2	41.5	17.8

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[1] 14 years of age and over.
[2] Civilian population.

Source: Population: U. S. Bureau of the Census. Labor Force: 1910-1940, U. S. Bureau of the Census; 1950, Montana, estimated by Bureau of Business and Economic Research, Montana State University; United States, estimated by Bureau of the Census.

percent. However, in Montana the correlation has not been so close as in the United States. While Montana's civilian population growth since 1910 has been almost equal to that of the United States (56.6 percent), the labor force 14 years of age and over is estimated to have increased only 38.3 percent. The explanation of the smaller growth of the labor force lies in the fact that in 1910 Montana's population was predominantly male and the labor force made up an abnormally high proportion—47.4 percent—of the population.

Since 1920, which proved to be the turning point in the population growth of the state,[1] the increase in labor force has been greater than for population. From 1920 to 1950, the increase in population in the United States amounted to 41.8 percent and labor force to 51.0 percent. In Montana, population gained only 7.3 percent, compared to a 15.2 percent gain in labor force. Actually, the labor force in Montana remained relatively stable from 1920 to 1940, with most of the increase coming after 1940. During the 20-year period from 1920 to 1940, the labor force grew only 5.2 percent; between 1940 and 1950, the estimated gain was 9.5 percent, compared to a civilian population growth of 5.3 percent. The rate of growth in Montana's labor force continued to be less than that of the United States, however, where the increase amounted to 17.8 percent between 1940 and 1950.

World War II provided an impetus for an increased labor force, as more jobs became available and more persons entered the labor force, motivated by patriotism and the opportunity for economic gain. In spite of this, the labor force in Montana declined during the war years because of the large number of people who moved out of the state seeking employment in war industries. Thus, it is likely that the increase in labor force in Montana between 1940 and 1950 came in the latter part of the decade, as many of the state's citizens returned from war production centers and the armed services. Estimates of the average annual labor force from 1940 to 1950 are included in the Appendix. These figures, however, are presented only as approximations.

The percentage of Montana's population in the labor force has remained fairly stable for the Census years since 1920, and as shown in Table 6, has been approximately the same as for the United States. In 1910, the labor force was disproportionately high because of the large number of males in the state, and consisted of 47.4 percent of the population. By 1920, however, the labor force accounted for only 39.0 percent of the population.[2] In 1930 and 1940, 40.2 percent of Montana's citizens were in the working force. Between 1940 and 1950, the percentage increased to an estimated 41.8 percent as more people, particularly women, entered the labor force.[3] In view of the decline in population reported by the Census Bureau during the war years and the high level of employment in the state, it is believed that the percentage of civilian population in the labor force may have risen as high as 43 or 44 percent during some of the intercensal years.

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[1] See chapter on population.

[2] This percentage may be somewhat low for comparison with other years, since the 1920 Census was taken as of January 1 instead of April 1.

[3] The 1940 Census figures taken during the week March 24-30 do not include in the labor force seasonal workers who were neither working nor seeking work at that time. For previous Census years, such workers were counted if they reported an occupation. Thus during the period when different types of seasonal work were at their height, the labor force may have been considerably larger than the Census figures indicate.

Industrial Composition

Between 1940 and 1950, Montana's secondary and tertiary industries gained in importance at the expense of the primary group. The labor force in the state's primary industries, agriculture and mining, which accounted for 39.7 percent of the total in 1940, is estimated to have declined 11.8 percent to make up 28.2 percent of the total in 1950.[1] The concentration in these industries, however, was still higher than for the United States.

Manufacturing and construction, secondary industries, made a gain of 47.5 percent in employees between 1940 and 1950. Only 34,000 persons, or 14.8 percent of the labor force, were engaged in those lines of work, however, and the percent of total was only slightly higher than in 1940 (12.4 percent). Fifty-seven percent of the labor force was at work in the tertiary industries—trade, service, finance, transportation and utilities, and government—in 1950, compared to 47.9 percent in 1940. These industries increased 47.3 percent during the decade. Theoretically, the growth of tertiary industries follows the industrialization of an area. In Montana's case, however, it is probable that the great increase in personal income during the period was the prime factor in the expansion of tertiary industries between 1940 and 1950. It is likely that future increases will be more dependent upon growth in industrial activity.

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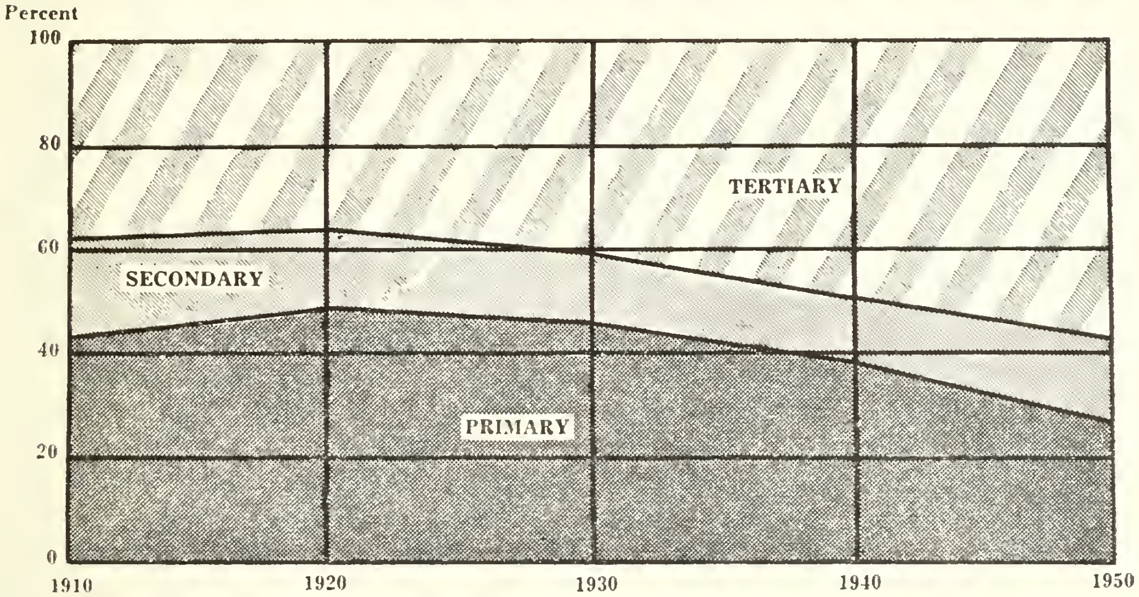
[1] Percentages based on labor force at work; excludes unemployed. The lumber industry, particularly that segment engaged in logging, is usually regarded as a primary industry. However, the federal government employment classification includes all lumbering in the manufacturing group and this classification has been followed in order to keep the data comparable.

Chart 11

PERCENT DISTRIBUTION OF THE EMPLOYED LABOR FORCE AMONG PRIMARY, SECONDARY, AND TERTIARY INDUSTRIES, MONTANA, 1910-1950



Note: The data for 1910, 1920, and 1930 include some unemployed persons.

Source: Computed from data in Table 7.

Table 7

LABOR FORCE IN MONTANA BY MAJOR INDUSTRY GROUPS, 1910-1950

Industry Group	**1910**	**1920**	**1930**	**1940**	**1950**
Agriculture, Forestry, and Fishing	55,017	85,020	82,656	59,778	53,100
Mining	20,339	18,233	18,368	13,806	11,800
Manufacturing and Construction	35,220	35,586	28,072	23,053	34,000
Transportation and Utilities	25,137	20,639	24,324	15,192	21,200
Trade	13,922	20,938	25,285	29,923	45,900
Finance, Services, and Miscellaneous	26,420	30,867	33,297	34,935	52,100
Government	2,692	2,900	4,469	8,877	11,800
Unemployment				39,430	16,500
Total[1]	178,747	214,183	216,471	224,994	246,400

---

[1] Gainful workers between the ages of 10 and 13 numbered 524 in 1910, 343 in 1920, and 306 in 1930. These numbers should be subtracted from the totals for those years for comparison with labor force figures in Table 6.

Source: 1910-1940, U. S. Bureau of the Census; 1950, estimated by Bureau of Business and Economic Research, Montana State University. See Appendix for method used.

Table 8

PERCENT DISTRIBUTION BY MAJOR INDUSTRY GROUPS OF THE EMPLOYED LABOR FORCE IN MONTANA, 1910-1950

	Percent of Total[1]				
Industry Group	**1910**	**1920**	**1930**	**1940**	**1950**
Agriculture, Forestry, and Fishing	30.8	39.7	38.2	32.2	23.1
Mining	11.4	8.5	8.5	7.4	5.1
Manufacturing and Construction	19.7	16.6	13.0	12.4	14.8
Transportation and Utilities	14.1	9.6	11.2	8.2	9.2
Trade	7.8	9.8	11.6	16.1	20.0
Finance, Services, and Miscellaneous	14.7	14.4	15.4	18.8	22.7
Government	1.5	1.4	2.1	4.9	5.1
Total	100.0	100.0	100.0	100.0	100.0

---

[1] The data for 1910, 1920, and 1930 include some unemployed persons. Small numbers of employed persons whose industry was not reported in 1930 and 1940 have been prorated among the various groups. Thus the percentages differ slightly from those given in Table 9.

Source: Computed from data in Table 7.

Table 9

PERCENT DISTRIBUTION BY MAJOR INDUSTRY GROUPS OF THE EMPLOYED LABOR FORCE, MONTANA AND THE UNITED STATES, 1940

Industry Group	Montana % of Total	United States % of Total	Deviation of Montana from the U.S.
Agriculture, Forestry, Fishing	32.2	18.8	+ 13.4
Mining	7.3	2.0	+ 5.3
Construction	4.8	4.6	+ 0.2
Manufacturing	7.4	23.4	— 16.0
Transportation, Communication, and Utilities	8.0	6.9	+ 1.1
Trade	15.8	16.7	— 0.9
Finance	1.9	3.2	— 1.3
Services	16.5	19.1	— 2.6
Government	4.8	3.8	+ 1.0
Industry not reported	1.3	1.5	— 0.2
Total	100.0	100.0	00.0

Source: Computed from U. S. Bureau of the Census data.

Table 9 compares the industrial distribution of the labor force in Montana and the United States in 1940. Outstanding differences are the greater importance of agriculture in Montana and the lesser importance of manufacturing. Mining also stands out as being of greater significance in Montana. Aside from the rather large deviations for these three groups, the distribution of the labor force is fairly comparable for the two areas.

Distribution by Sex

The percentage of women in the labor force in Montana, although increasing steadily since 1910, has always been substantially less than in the United States as a whole. In 1940, females accounted for 17.3 percent of Montana's labor force; in the United States, 24.4 percent of the labor force was made up of women workers. Because women in covered employment characteristically have a higher claim load ratio than men, the fact that Montana's labor force has a relatively small number of women is significant to the unemployment insurance program. Although there has undoubtedly been an increase in the number of women working in Montana since 1940, it is likely that the 1950 Census will show that the percentage of women in its labor force is still less than the national figure. Women constitute a smaller proportion of the population in Montana than in the United States; in addition, there are fewer job opportunities for women in Montana than in more highly industrialized areas. Over one-half of the women workers in the state in 1940 were employed in the service industries; another one-fourth were concentrated in the trade industries. In the United States the service industries were also the largest employers of women, although the concentration was not so heavy. Manufacturing rather than trade was the second largest employer.

Table 10
LABOR FORCE BY SEX, MONTANA AND THE UNITED STATES, 1910-1950

	Montana (thousands)					United States (millions)				
Year	Total Labor Force[1]	Male	Female	Percent Male	Percent Female	Total Labor Force[1]	Male	Female	Percent Male	Percent Female
1910	178.2	159.4	18.8	89.5	10.5	37.3	29.5	7.8	79.1	20.9
1920	213.8	185.6	28.2	86.8	13.2	41.2	32.8	8.4	79.6	20.4
1930	216.2	184.0	32.2	85.1	14.9	48.6	37.9	10.7	78.0	22.0
1940	225.0	186.1	38.9	82.7	17.3	52.8	39.9	12.9	75.6	24.4
1950	246.4	----	----	----	----	62.2	44.1	18.1	70.9	29.1

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[1] 14 years of age and over.

Source: 1910-1940: U. S. Bureau of the Census. 1950: Montana, estimated by Bureau of Business and Economic Research, Montana State University; United States, estimated by U. S. Bureau of the Census.

Table 11
EMPLOYED PERSONS IN MAJOR INDUSTRY GROUPS BY SEX, MONTANA AND THE UNITED STATES, 1940

	Montana (thousands)				United States (millions)			
Industry Group	Male	Female	Total	Percent Female	Male	Female	Total	Percent Female
Agriculture	58.2	1.6	59.8	2.7	8.0	.5	8.5	5.7
Mining	13.4	.1	13.5	.7	.9	----[2]	.9	1.2
Construction	8.8	----[1]	8.8	----	2.0	----[2]	2.1	1.7
Manufacturing	12.9	.8	13.7	5.8	8.3	2.3	10.6	22.0
Transportation & Utilities	13.7	1.2	14.9	8.1	2.8	.3	3.1	11.1
Trade	21.6	7.7	29.3	26.3	5.5	2.0	7.5	26.9
Finance	2.4	1.2	3.6	33.3	1.0	.5	1.5	31.0
Services	13.8	16.9	30.7	55.0	3.7	4.9	8.6	56.8
Government	6.9	2.0	8.9	22.5	1.4	.3	1.7	19.4
Industry not reported	1.6	.8	2.4	33.3	.5	.2	.7	34.6
Total	153.3	32.3	185.6	17.4	34.1	11.1	45.2	24.7

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[1] Less than 100.

[2] Less than 100,000.

Source: U. S. Bureau of the Census.

Table 12

DISTRIBUTION OF THE LABOR FORCE BY AGE GROUPS, MONTANA AND THE UNITED STATES, 1940

	Montana			United States		
Age Group	Number (thousands)	% of Total	Cumulative Percent	Number (millions)	% of Total	Cumulative Percent
14 - 19	13.5	6.0	6.0	3.9	7.4	7.4
20 - 24	31.9	14.2	20.2	7.7	14.6	22.0
25 - 44	95.5	42.4	62.6	24.7	46.7	68.7
45 - 64	73.5	32.7	95.3	14.4	27.3	96.0
65 and over	10.6	4.7	100.0	2.1	4.0	100.0
Total	225.0	100.0	100.0	52.8	100.0	100.0

Source: U. S. Bureau of the Census.

Distribution by Age

Montana's labor force is slightly older than that of the United States. A smaller percentage of young people under 18 years of age were members of the labor force in 1940 in Montana. A somewhat larger percentage of the state's labor force consisted of persons 65 years of age and over. Like the United States, the percentage of persons 65 years of age and over in the labor force in Montana declined between 1930 and 1940 even though the population contained more persons in that age group, due to the scarcity of jobs and the competition from younger applicants for work. Whether or not this segment of the labor force will continue to decline in numbers depends largely upon the adequacy of retirement plans and pensions in the future.

Racial Composition

Racially, the labor force in Montana in 1940 was composed almost entirely of white workers—97.7 percent. Only 0.2 percent of the labor force was made up of Negro workers and 2.1 percent of other races, mostly Indians. The United States has a much higher proportion of Negro workers—10.2 percent—with 0.4 percent composed of other races, leaving 89.4 percent of the labor force made up of white workers.

IV. Employment and Unemployment

Economic Factors Affecting Employment

The volume of employment is determined largely by the stage of economic development. As an economy matures and the secondary industries assume a leading role, employment opportunities become more plentiful. A single large new manufacturing enterprise may create many new jobs in industries serving it. In the preceding chapters, the effect of the lack of industrialization of Montana on the size of its population and labor force have been discussed.

Stability of employment is more significant than volume from the standpoint of unemployment compensation. Of course a higher volume of employment will make more unemployment possible. At the same time, the higher payrolls will furnish more contributions to pay unemployment benefits. But if employment is heavily weighted with unstable elements, the ratio of benefits to taxable wages will increase. Stability of employment depends upon numerous factors. The following appear to be among the most significant.

A basic factor is the proportion of the working force engaged in industries which are especially sensitive to cyclical disturbances. A depression will cause more unemployment in a manufacturing than in an agricultural area. An economy with a relatively large output of durable and luxury goods will be more sensitive than one whose production consists mainly of necessary food and clothing items. A similar factor is the proportion of the working force engaged in employment which is seasonal in nature. Even though it recurs regularly, seasonal unemployment adds to the volume of claims for unemployment benefits. The direction of growth, therefore, is highly important. There may be a growth of manufacturing and, consequently, an increasing proportion of workers in employment with greater sensitivity to cyclical instability. Or there may be a growth of industries subject to more or less than average seasonal variation, and this will affect the volume of seasonal unemployment claims. There may also be a development of some other nature, such as a change in the ratio of female workers to total workers, which will have an effect on the claim load.

The rate of growth of the economy is another factor to be considered. A rapid growth in most sectors of the economy may be sufficient to absorb unemployment arising in certain other sectors. This will obscure the effects of minor recessions and lessen the drain on insurance funds. It is possible, however, that the absorption of the unemployed by the expanding sectors will be offset by the heavy in-migration of workers from other states. The rate of absorption will be slowed if the unemployed workers are highly specialized, since their specialization is likely to keep them unemployed for a longer period.

A further consideration is the extent to which labor is mobile. Members of a highly mobile labor force can move readily from place to place to take new jobs. Consequently, they suffer less from unemployment than a firmly-rooted working population which is relatively immobile. The high degree of mobility of Montana's population has been discussed in Chapter II.

The proportion of the working force in covered occupations must also be considered, together with the varying effects of irregular employment and income in covered and excluded occupations. Unemployment in a covered industry has a direct effect on unemployment insurance costs. Unemployment or decline of income in an excluded industry, such as agriculture, has indirect or secondary effects, resulting in loss of business and unemployment in covered industries, such as retail trade. The timing must also be taken into consideration, since the magnitude of the secondary effects will depend partly on the lag in their occurrence.

Among other factors which must be considered are the rate of technological improvement, the extent of exhaustion of natural resources, and the state of labor-management relations, all of which have a bearing upon present and future employment.

Types of Unemployment

In general, an unemployed person is defined as one who is involuntarily without work; he is able to work and wants to work. This broad description lends itself to a wide variety of interpretations as to what constitutes the ability and desire to work.

Usually, unemployment is divided into two categories: frictional and general. Frictional unemployment arises in seasonal or in declining industries, or as a result of technological changes. A certain proportion of the labor force is always unemployed for one reason or another, but this type of unemployment is assumed to be temporary, until such time as the right worker and the right job can get together. General unemployment, on the other hand, occurs when unemployment is widespread over most of the area of an economy and in most occupations. Because of its relationship to cyclical fluctuations, it is much more difficult to anticipate.

Seasonality of Employment in Montana

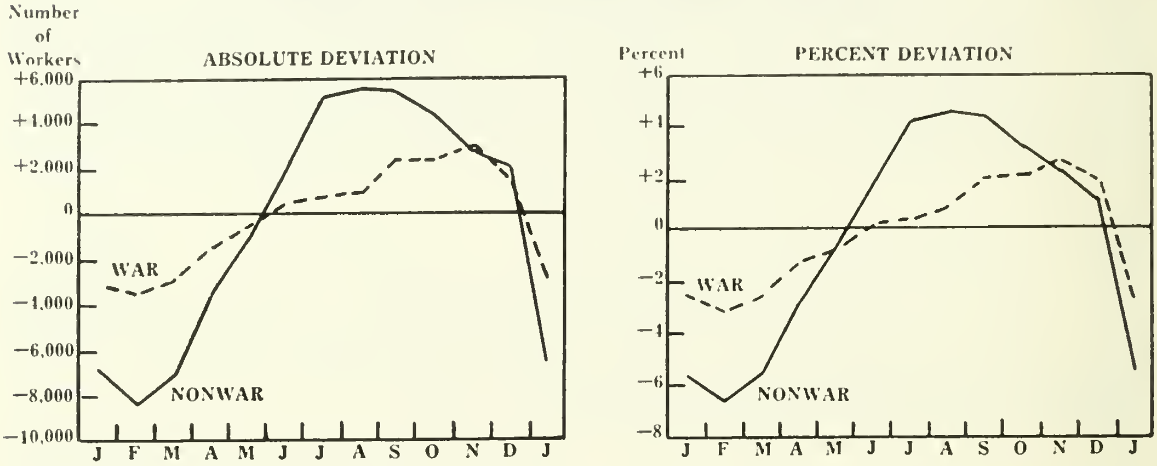
Any understanding of employment and unemployment in Montana must be preceded by an analysis of seasonal patterns. Employment in the state is characterized by extreme seasonality, due to the rather severe winters which drastically curtail such activities as lumbering and construction and to the nature of other industries, such as agriculture, trade, and food processing, which have fluctuating demands for workers. A large part of the burden placed upon unemployment insurance funds originates in the recurring seasonal pattern of unemployment among the various industries.

Chart 12 presents typical seasonal patterns for Montana's nonagricultural industries from 1940 through 1949. Typical percentage deviations each month from the average month and absolute deviations in terms of numbers of workers are depicted. February is the low month of the year with employment falling to 6.7 percent below the average during the nonwar years (1940-1941 and 1946-1949). The months of June through December are regularly above the average, the index experiencing a rapid rise from February to July, followed by a slight increase to the August high of 4.5 percent above the average. During the rest of the year the movement is downward.

The seasonal pattern for the four war years, 1942-1945, has been treated separately, partly because of the lesser amplitude of seasonal fluctuations, which, if included with the nonwar years would tend to distort the pattern, and in part because of the possibility that such a situation might again develop. Seasonal unemployment was greatly reduced during the war, partly as a result of the effort of industries

Chart 12

TYPICAL SEASONAL VARIATION OF NONAGRICULTURAL EMPLOYMENT IN MONTANA, NONWAR AND WAR YEARS, 1940-1949



Note: Nonwar years=1940, 1941, and 1946-1949. War years=1942-1945. Zero line represents average employment during each period.

Source: Unemployment Compensation Commission of Montana.

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such as lumber to operate year round, in part because of the curtailment of construction activity, and because of the ease with which the seasonally unemployed could obtain supplementary work. The seasonal pattern is somewhat similar to the nonwar pattern, though with much smaller fluctuations, with February 3.1 percent below and August 0.9 percent above the average. The nonwar pattern turns down for the rest of the year, however, while the wartime seasonal variation mounted to a high in November of 102.6 percent.

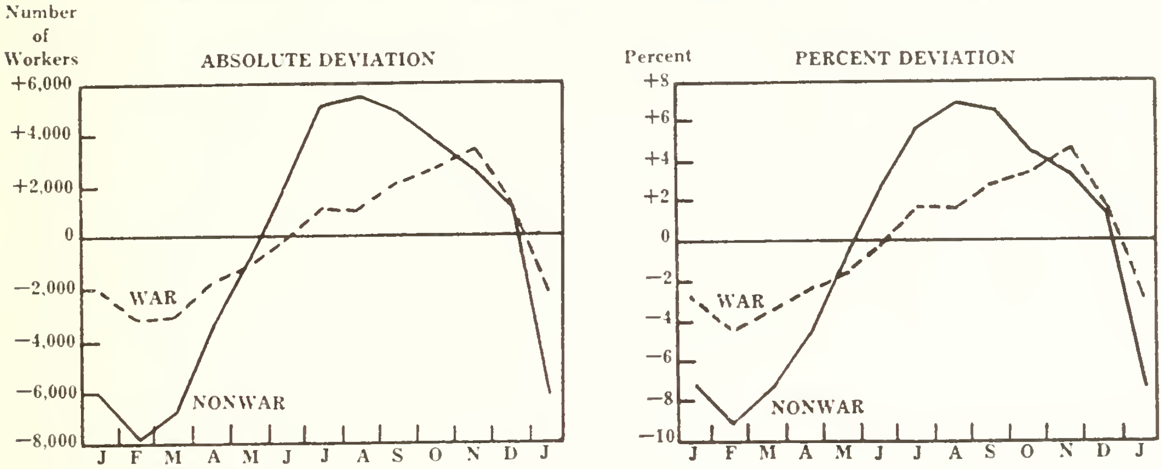
These percentages represent a swing from 8,300 less than the average monthly employment in February to a high of 5,500 above the average month in August, or an increase seasonally of 13,800 workers for the nonwar years. Fluctuations from the high to the low month during the war period amounted to about 6,400 employees.

The seasonal pattern obtained by analyzing covered employment in Montana does not vary significantly from that for all nonagricultural workers. (See Chart 13.) The month-to-month changes follow the same direction for both nonwar and war periods, although the nonwar index of seasonal variation dips to a low of 9.2 percent below and rises to a high of 6.8 percent above the average month from February to August, indicating that seasonal unemployment is somewhat more severe in the covered industries. For the wartime period, fluctuations were much smaller, with a variation of 4.4 percent below to 1.6 percent above the average from February to August, and, following the nonagricultural pattern, with the high in November, in this case 4.6 percent higher than average.

The February low for the nonwar covered employment pattern can be interpreted as being about 7,900 workers below the average month, with the August high reaching 5,300 above the average month, a climb in employment within the six-months' span of 13,200 workers. The range

Chart 13

TYPICAL SEASONAL VARIATION OF COVERED EMPLOYMENT IN MONTANA, NONWAR AND WAR YEARS, 1940-1949



Note: Nonwar years = 1940, 1941, and 1946-1949. War years = 1942-1945. Zero line represents average employment during each period.

Source: Unemployment Compensation Commission of Montana.

for Montana's wartime seasonal variation in covered industries ran from 3,200 below to 3,400 above the average month, or a seasonal increase of 6,600.

Total Employment and Unemployment in Montana Since 1940

During the Census week, March 24-30, 1940, there were 185,564 persons at work in the state of Montana. At the same time, 39,430 workers were unemployed. A part of this unemployment was seasonal, but the greater portion represented a residue from the depression of the thirties. It is estimated that by April 1, 1950, the number employed had increased to 229,900, a gain of 23.9 percent, while unemployment amounted to about 16,500.[1]

Employment in Montana increased from 1940 to 1942 as business conditions in the United States improved as a result of defense and war production. Unemployment, however, remained fairly high, even though decreasing in volume. The war boom which took place in most sections of the country had little direct effect in Montana, other than to stimulate the demand for Montana's export products—such as minerals, lumber, and agricultural commodities—and thereby create somewhat higher levels of income and employment. Practically no war manufacturing industries were located within the state. As a result, an additional effect of the war was to attract large numbers of Montana workers out of the state to manufacturing areas where job opportunities were more numerous and remunerative. By 1943, employment began to decline as a result of the loss in population, and unemployment became almost negligible, as the unemployed left the state or obtained work in Montana and seasonal unemployment was reduced. Despite the fact that many new workers entered the labor market, a shortage of workers developed in the state.

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[1] Estimated total employment and unemployment figures by years from 1940 to 1950 are presented in the Appendix. Total employment includes the self-employed as well as wage and salary workers.

Table 13
AVERAGE NONAGRICULTURAL EMPLOYMENT IN MONTANA BY MAJOR INDUSTRY GROUPS, 1939 - 1950
(thousands of workers)

	1939	1940	1941	1942	1943	1944	1945	1946	1947	1948	1949	1950
All Nonagricultural Industries	101.8	107.5	112.2	115.9	114.7	113.3	113.2	125.9	136.4	143.4	145.0	147.1[1]
Mining	10.2	12.8	14.7	15.4	14.3	11.6	9.2	8.9	9.6	10.2	9.9	10.2
Contract Construction	5.7	5.6	4.7	5.2	3.3	3.1	3.7	5.8	7.3	9.1	9.7	10.5
Manufacturing	11.9	13.8	15.0	16.0	15.8	15.6	14.6	16.2	18.4	18.4	17.8	18.1
Transportation, Communication, and Other Public Utilities	15.1	15.3	16.1	17.4	20.2	20.9	21.3	21.5	22.2	22.1	21.7	22.0
Wholesale & Retail Trade	25.2	25.9	26.5	25.1	24.2	25.0	26.7	31.9	34.1	37.0	36.9	36.6
Services[2]	10.5	10.1	10.7	11.2	11.0	11.3	11.9	13.8	16.8	17.4	18.4	18.8
Finance, Insurance, and Real Estate	1.9	2.4	2.6	2.6	2.6	2.7	2.9	3.2	3.4	3.6	3.7	3.9
Government	21.3	21.5	22.2	22.9	23.3	23.1	22.9	24.7	24.6	25.7	26.9	27.3
PERCENT DISTRIBUTION												
All Nonagricultural Industries	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Mining	10.0	11.9	13.1	13.3	12.5	10.2	8.1	7.1	7.0	7.1	6.8	6.9
Contract Construction	5.6	5.2	4.2	4.5	2.9	2.7	3.3	4.6	5.4	6.3	6.7	7.1
Manufacturing	11.7	12.8	13.5	13.8	13.8	13.8	12.9	12.9	13.6	12.8	12.3	12.3
Transportation, Communication, and Other Public Utilities	14.8	14.2	14.3	15.0	17.5	18.4	18.8	17.1	16.3	15.4	15.0	14.9
Wholesale & Retail Trade	24.8	24.2	23.6	21.8	21.1	22.1	23.6	25.2	25.0	25.8	25.4	24.8
Services	10.3	9.4	9.5	9.7	9.6	10.0	10.5	11.0	12.3	12.1	12.7	12.8
Finance, Insurance, and Real Estate	1.9	2.2	2.2	2.2	2.3	2.4	2.6	2.5	2.5	2.5	2.6	2.6
Government	20.9	20.1	19.7	19.7	20.3	20.4	20.2	19.6	18.0	18.0	18.5	18.5

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[1] Revised figure; 1950 industry data below are preliminary.

[2] Includes small numbers of miscellaneous workers not elsewhere classified.

Source: Unemployment Compensation Commission of Montana.

With no war industries, Montana was not affected so severely by the reconversion problem which faced much of the nation at the end of the war. The return of servicemen and workers from war production centers created some unemployment. However, employment expanded rapidly as labor became available and as civilian goods reappeared on the market to meet the tremendous demand built up during the war.

The recession period which took place in the United States in 1949 and 1950 did not appear to affect Montana until late in 1949. Unemployment rose sharply, particularly during the first few months in 1950 and although at the end of the year the state showed a small increase in employment, unemployment is believed to have reached the highest point since 1942.

It is obvious that the pattern of Montana employment and unemployment has differed somewhat from that of the United States. While nationally the highest rate of increase in employment took place from 1940 to 1943, Montana experienced its greatest period of expansion at the end of World War II. The increase in the United States was largely a result of a tremendous expansion in manufacturing for war. In Montana, expanded employment took place after the war as the demand for goods and services increased; manufacturing continued to be relatively unimportant. On the whole, Montana appears to have had less unemployment than the United States since 1940. Two important factors in the low unemployment rates for Montana since 1943 may be cited: the lack of manufacturing and greater dependence upon primary industries, and the heavy out-migration during the early years of the war.

Nonagricultural Employment

All of the increase in employment since 1939 has taken place in the nonagricultural industries. In 1950, employees in nonagricultural establishments averaged 147,100, representing a total gain of 45,300 or 44.5 percent since 1939, the same rate of increase which took place nationally. Table 13 shows estimated nonagricultural employment by major industry groups from 1939 to 1950. Largest absolute increase for an individual industry group during the 12-year period took place in trade, where 11,400 more persons were at work in 1950. Services followed with a gain of 8,300; transportation and public utilities, 6,900; manufacturing, 6,200; government, 6,000; contract construction, 4,800; and finance, 2,000; mining is the only nonagricultural industry which did not gain in employment between 1939 and 1950. After increasing by over 5,000 workers between 1939 and 1942, it declined steadily until 1947 and in 1950 had risen only to the 1939 level.

Table 14 permits comparison of the structure of nonagricultural employment in Montana and the United States and of the changes which occurred in each area between 1939 and 1950. In the nation, one-third of all nonagricultural employment is concentrated in manufacturing, while in Montana trade and government employ the largest percentage of workers. Transportation, mining, services, and construction also are of greater relative importance in Montana than in the country as a whole.

The percentage of workers in each industry group in the United States was approximately the same in 1950 as in 1939. In Montana, changes in the distribution of employment during the 12-year period

Table 14
PERCENT OF TOTAL NONAGRICULTURAL EMPLOYMENT IN MAJOR INDUSTRY GROUPS, MONTANA AND THE UNITED STATES, 1939 AND 1950

	Montana		United States	
Industry Group	**1939**	**1950**	**1939**	**1950**
Mining	10.0	6.9	2.6	2.0
Contract Construction	5.6	7.1	4.0	5.2
Manufacturing	11.7	12.3	33.3	33.8
Transportation, Communication, & Other Public Utilities	14.8	14.9	9.6	9.1
Wholesale & Retail Trade	24.8	24.8	21.8	21.5
Services	10.3	12.8	10.9	10.9
Finance, Insurance, & Real Estate	1.9	2.6	4.6	4.1
Government	20.9	18.5	13.2	13.4
Total	100.0	100.0	100.0	100.0

Source: Unemployment Compensation Commission of Montana and U. S. Department of Labor.

were more pronounced, with mining and government accounting for a smaller percentage of the total in 1950 and services and construction increasing their relative importance. Other industry groups remained approximately the same. None of the changes was significant enough to have a great deal of effect upon the stability or instability of employment, although it is possible that the combination of a decline in the importance of government and mining, relatively stable from the standpoint of seasonality, and the increase in employment in the extremely seasonal construction industry might tend to make the seasonal variation of total nonagricultural employment somewhat greater than in 1939.

Covered Employment

From the standpoint of the unemployment compensation program, employment and unemployment in the covered industries are of the greatest significance. That is, only those unemployed workers in covered industries who have established sufficient wage credits and are otherwise qualified are eligible for the insurance benefits. The volume of employment and unemployment in excluded industries may be of direct concern to unemployment compensation, however, in that shifts in those industries may result in changing business conditions and more or less employment and unemployment in covered industries. Industries excluded from coverage are agriculture, interstate railroads, government, and some segments of the service industries.

The proportion of employment in covered industries has increased in relation to the labor force and to total employment since 1940, accounting in 1950 for 40.9 percent of the estimated labor force and 42.9 percent of estimated total employment, compared to 32.8 and 37.8 percent respectively in 1940. The number of workers in covered industries is constantly fluctuating as workers move in and out of covered employment. In general, covered employment closely follows the pattern of nonagricultural employment, although the fluctuations, both seasonal and cyclical, have been more pronounced.

Table 15
AVERAGE COVERED EMPLOYMENT IN MONTANA BY MAJOR INDUSTRY GROUPS, 1939 - 1950
(thousands of workers)

	1939	1940	1941	1942	1943	1944	1945	1946	1947	1948	1949	1950
All Covered Industries	68.3	73.8	77.1	78.5	74.1	72.0	71.8	83.2	92.0	98.3	98.8	101.1
Mining	10.2	12.8	14.7	15.4	14.3	11.6	9.2	8.9	9.7	10.2	9.6	10.2
Contract Construction	5.7	5.6	4.7	5.2	3.3	3.1	3.7	5.8	7.3	9.1	9.8	10.5
Manufacturing	11.9	13.8	15.1	16.0	15.8	15.6	14.6	16.2	18.5	18.3	17.8	18.1
Transportation, Communication, and Other Public Utilities	5.4	5.5	5.8	5.8	5.7	5.4	5.6	6.4	7.1	7.5	7.6	7.7
Wholesale & Retail Trade	25.2	25.9	26.5	25.1	24.2	25.0	26.7	31.9	33.8	36.5	36.6	36.6
Services	7.5	7.6	7.9	8.2	7.9	8.4	9.1	10.7	12.1	13.0	13.5	13.5
Finance, Insurance, and Real Estate	1.9	2.4	2.6	2.6	2.6	2.7	2.9	3.2	3.4	3.6	3.7	3.9
Miscellaneous, Not Elsewhere Classified	.6	.1	.1	—	.2	.1	.1	.1	.1	.1	.1	.6
PERCENT DISTRIBUTION												
All Covered Industries	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Mining	14.9	17.3	19.0	19.7	19.3	16.1	12.8	10.7	10.5	10.4	9.7	10.1
Contract Construction	8.3	7.6	6.1	6.6	4.5	4.3	5.4	7.0	8.0	9.3	9.9	10.4
Manufacturing	17.4	18.7	19.6	20.4	21.4	21.7	20.3	19.5	20.1	18.6	18.0	17.9
Transportation, Communication, and Other Public Utilities	7.9	7.5	7.5	7.4	7.7	7.5	7.7	7.7	7.7	7.6	7.7	7.6
Wholesale & Retail Trade	36.8	35.2	34.3	32.1	32.7	34.8	37.1	38.3	36.7	37.1	37.0	36.2
Services	11.0	10.2	10.3	10.4	10.6	11.7	12.7	12.9	13.2	13.2	13.7	13.3
Finance, Insurance, and Real Estate	2.8	3.3	3.2	3.3	3.5	3.8	4.0	3.8	3.7	3.7	3.7	3.8
Miscellaneous, Not Elsewhere Classified	.9	.2	.1	—	.3	.1	.1	.1	.1	.1	.1	.6

Source: Unemployment Compensation Commission of Montana.

During the war years, 1942-1945, covered employment fell off more sharply than did nonagricultural employment, losing 6,700 workers (8.5 percent) compared to 2,700 or 2.3 percent in nonagricultural employment, as interstate railroad employment tended to offset a good portion of the loss in covered industries. In 1945, covered employment amounted to only 63.4 percent of nonagricultural employment, compared to 68.7 percent in 1940 and 1941. Most of the decline in covered industries came in mining, which lost 6,200 employees during the three-year period. From 1945 to 1950, the growth in covered employment surpassed nonagricultural employment, increasing 40.8 percent, compared to 30.1 percent. The greater postwar increase in covered employment, however, served only to regain its prewar position in relation to total nonagricultural employment. In 1950 covered employment accounted for 68.6 percent of all nonagricultural employees.

The average number of covered employees in 1950 was 101,100, with the trade industries employing the largest group, 36,600, followed by manufacturing with 18,100 and the covered service industries with 13,500. As in the case of nonagricultural employment, shifts in the relative importance of the various industry groups between 1939 and 1950 were not large enough to be of great significance to the unemployment insurance program. (See Table 15 and Chart 14.) Mining declined from 14.9 percent of total covered employment in 1939 to 10.1 percent in 1950 while construction increased from 8.3 to 10.4 percent and services from 11.0 to 13.3 percent. An increase in total covered employment, unless accompanied by important changes in individual industries, is of little significance to the program as a whole, for while the amount of benefit payments may increase, contributions may be expected to rise accordingly.

During World War II, the structure of covered employment underwent some significant, if temporary, changes. During the year 1943, for example, mining employment amounted to 19.3 percent of total covered employment and manufacturing accounted for 21.4 percent, compared to 14.9 and 17.4 percent respectively for these industries in 1939. Trade declined from 36.8 to 32.7 percent of the total and construction from 8.3 to 4.5 percent, while the service industries also decreased slightly. Adjustments similar to these may take place again if the present emergency should grow more critical or if all-out war develops.

Complete estimates of covered unemployment are not available.[1] Ratios of claimants receiving benefits to the total of covered employment plus claimants, however, indicate that unemployment tends to be slightly more severe in the covered industries than in the labor force as a whole. Those major segments of the economy not covered by unemployment insurance—agriculture, interstate railroads, and government—are generally conceded to be more stable in terms of cyclical fluctuations in employment than some of the other industries.

Total wages paid to covered workers in Montana more than tripled between 1939 and 1950. In that year, they amounted to $291.8 million. The growth in total wages was steady throughout the 12-year period; declines which took place in construction and trade during the war and in mining and manufacturing at the end of the war, reflecting decreases in employment, were offset by increases in wages paid by other industry

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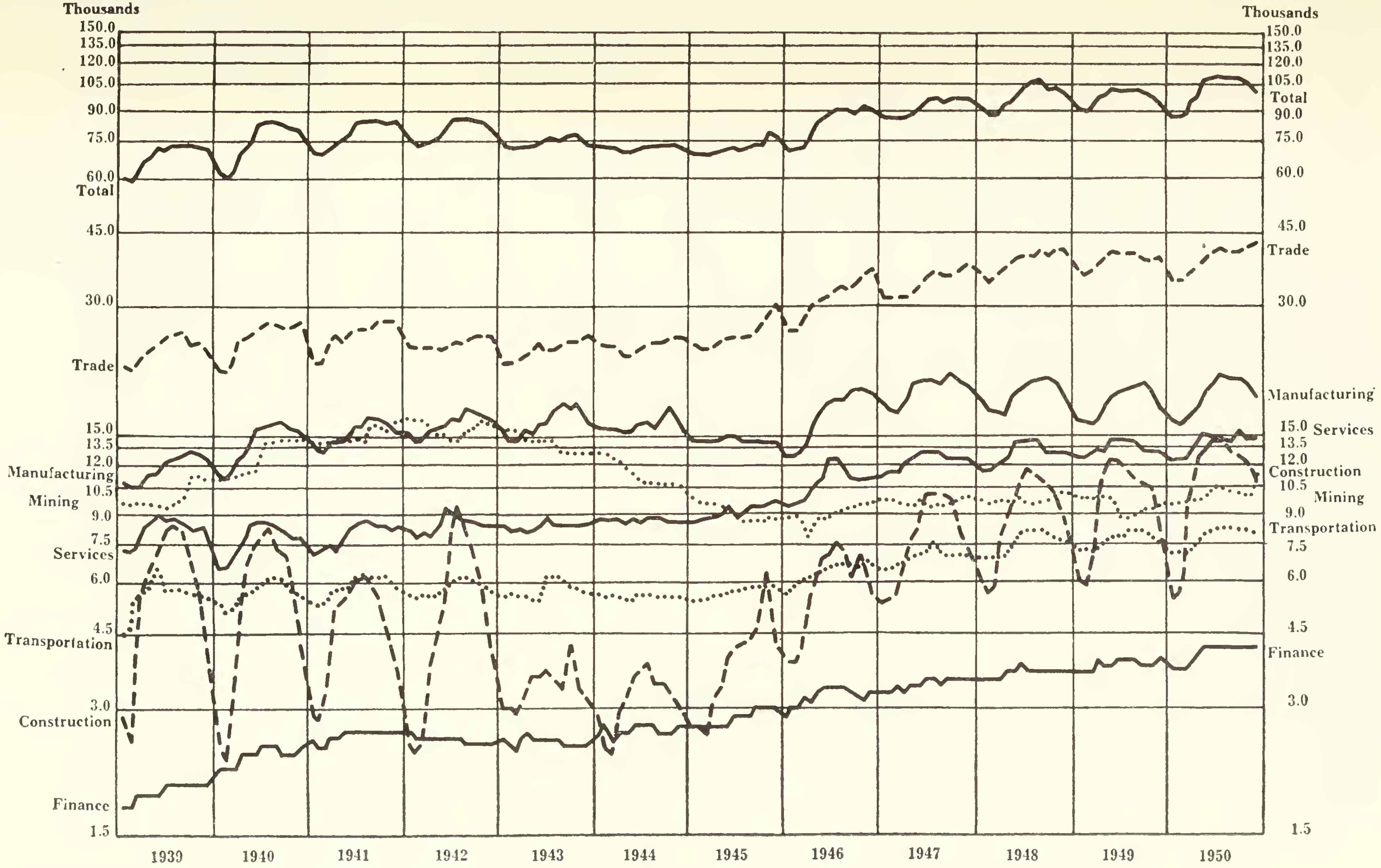
[1] Primarily because of the limitations on eligibility such as ability and readiness to work and a maximum duration of 18 weeks of benefit payments.

Chart 14 COVERED EMPLOYMENT IN MONTANA BY MAJOR INDUSTRY GROUPS, 1939-1950
(Ratio Scale)



Note: Unadjusted for seasonal variation.
Source: Unemployment Compensation Commission of Montana.

Table 16

ANNUAL TOTAL WAGES PAID TO WORKERS COVERED BY MONTANA UNEMPLOYMENT COMPENSATION LAW, BY MAJOR INDUSTRY GROUPS, 1939 - 1950

(millions of dollars)

	1939	1940	1941	1942	1943	1944	1945	1946	1947	1948	1949	1950
All Covered Industries	90.3	101.1	110.0	130.2	136.6	138.5	140.6	173.1	214.9	255.4	269.3	291.8
Mining	16.4	22.6	26.3	33.6	37.0	32.2	25.5	25.4	30.8	35.2	32.9	35.9
Contract Construction	6.5	6.7	6.1	12.2	7.7	7.4	8.8	13.6	18.5	27.6	32.7	38.1
Manufacturing	18.6	21.2	24.3	29.5	36.0	35.1	33.4	38.0	48.2	53.2	54.9	59.4
Transportation, Communication, and Other Public Utilities	8.2	8.6	9.2	10.1	10.7	11.1	11.9	15.1	18.1	20.8	22.5	23.8
Wholesale & Retail Trade	29.5	31.0	32.6	32.4	32.3	37.8	44.2	58.9	71.9	85.9	90.7	95.4
Services	6.8	7.2	7.3	8.4	9.0	10.0	11.7	15.8	19.9	23.2	25.9	27.2
Finance, Insurance, and Real Estate	3.6[1]	3.7[1]	4.0	4.0	4.0	4.6	5.1	6.3	7.4	8.4	9.3	10.4
Miscellaneous, Not Elsewhere Classified	.7	.1	.1	—[2]	—[2]	.1	.1	.1	.1	1.2	.2	1.5
PERCENT DISTRIBUTION												
All Covered Industries	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Mining	18.2	22.4	23.9	25.8	27.1	23.2	18.1	14.7	14.3	13.8	12.2	12.3
Contract Construction	7.2	6.6	5.5	9.4	5.6	5.3	6.3	7.9	8.6	10.8	12.1	13.1
Manufacturing	20.6	21.0	22.1	22.7	26.4	25.3	23.8	22.0	22.4	20.8	20.4	20.4
Transportation, Communication, and Other Public Utilities	9.1	8.5	8.4	7.8	7.8	8.0	8.5	8.7	8.4	8.1	8.4	8.2
Wholesale & Retail Trade	32.7	30.7	29.6	24.9	23.6	27.3	31.4	34.0	33.5	33.6	33.7	32.7
Services	7.5	7.1	6.6	6.5	6.6	7.2	8.3	9.1	9.3	9.1	9.6	9.3
Finance, Insurance, and Real Estate	4.0[1]	3.7[1]	3.6	3.1	2.9	3.3	3.6	3.6	3.4	3.3	3.5	3.6
Miscellaneous, Not Elsewhere Classified	.8	.1	.1	—	—	—	—	—	—	.5	—	.5

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[1] Not strictly comparable with following years.
[2] Less than $0.1 million.

Source: Unemployment Compensation Commission of Montana.

groups. (See Table 16.) The outstanding shift in the composition of wage payments during the period was the decline in mining, from 18.2 percent of total covered wages paid in 1939 to 12.3 percent in 1950. However, with only 10.1 percent of all covered employees, mining continued to be a relatively high paying industry. Contract construction and manufacturing also rank well above the average, while trade, with the largest percentage of total wage payments, and services are of less relative importance than in numbers employed.

In comparing the unemployment compensation experience of various industry groups or of the state and the nation, the ratio of benefit payments to taxable wages[1] is the most convenient and widely accepted measure. This ratio has the effect of adjusting for differences in size and population among different industries or regions.

From 1940 to 1942, the ratio of benefit payments to taxable wages for total covered employment was higher for Montana than for the United States, as the state responded slowly to the upswing brought about by the defense effort. In 1943 and 1944, benefit payments were extremely low for both areas, amounting to only 0.1 percent of taxable wages. Between 1945 and 1949, Montana was consistently lower than the nation. In the immediate postwar years there was less war production readjustment in Montana than in most of the nation and in 1949 the state reacted more slowly and to a lesser degree than the rest of the nation to the economic downswing. In 1950, the ratio for both areas was equal, 1.7 percent of taxable wages. (See Table 17.)

Table 17

RATIO OF BENEFIT PAYMENTS TO TAXABLE WAGES, ALL COVERED INDUSTRIES, MONTANA AND THE UNITED STATES, 1940-1950

Year	Montana	United States	Year	Montana	United States
1940	3.1	1.7	1946	0.7	1.7
1941	2.4	0.9	1947	0.5	1.1
1942	1.0	0.7	1948	0.6	1.0
1943	0.1	0.1	1949	1.1	2.3
1944	0.1	0.1	1950	1.7	1.7
1945	0.1	0.8			

Source: Unemployment Compensation Commission of Montana and Bureau of Employment Security.

Table 18 pictures benefit payment experience for total covered employment and for major industry groups in Montana since July 1, 1942. The ratios for the eight-year period vary widely, from 1.30 percent for contract construction to 0.23 percent for finance, insurance, and real estate. Payments were uniformly low for all industries during the war, increasing in 1945-1946, and increasing sharply again in 1949-1950. The use of a fiscal rather than a calendar year basis emphasizes the large increase in benefit payments in late 1949 and early 1950, when total payments more than doubled over 1948-1949 and amounted to $4.7 million, or 2.02 percent of taxable wages.

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[1] Total unemployment insurance payments as a percent of total taxable wages paid to workers within the industry. In Montana, individual wages or salaries up to $3,000 a year are taxable under the unemployment compensation law.

Table 18

RATIO OF BENEFIT PAYMENTS TO TAXABLE WAGES UNDER MONTANA UNEMPLOYMENT COMPENSATION LAW, BY MAJOR INDUSTRY GROUPS, FISCAL YEARS, 1943-1950

	1942-43	1943-44	1944-45	1945-46	1946-47	1947-48	1948-49	1949-50	Ratio for 8-year period
All Covered Industries	.14	.07	.06	.63	.52	.61	.81	2.02	.72
Mining[1]	.07	.08	.06	1.08	.58	.56	.68	1.81	.57
Contract Construction	.20	.16	.11	1.05	.75	.99	1.30	2.98	1.30
Manufacturing[2]	.09	.04	.05	.71	.42	.67	1.08	1.85	.69
Transportation, Communication, and Other Public Utilities	.07	.05	.02	.27	.18	.25	.32	.78	.29
Wholesale and Retail Trade	.22	.06	.05	.46	.58	.59	.68	1.42	.63
Services	.29	.09	.08	.49	.59	.68	.73	1.52	.71
Finance, Insurance, and Real Estate	.10	.04	.05	.18	.22	.26	.27	.45	.23

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[1] Because a small number of manufacturing employees in smelting and refining are reported with the mining group, these ratios are slightly less reliable than those for other industry groups.

[2] Because a small number of mining employees are reported with the manufacturing group, these ratios are slightly less reliable than those for other industry groups.

Source: Unemployment Compensation Commission of Montana.

V. Agriculture

In terms of income and employment, agriculture is one of the most important segments of Montana's economy. It has accounted for from 15 to 35 percent of total income payments to individuals during the past twenty years; in April 1950, it is estimated that 21.6 percent of the total labor force was engaged in agricultural work on farms. On a yearly basis, it is likely that agricultural employment might approximate one-fourth of the labor force. Careful consideration must be given agriculture in any study of the economy of the state, not only because of its relative importance, but because of its greater volatility as to income than in many other states.

During the past twenty years, cash receipts from farm marketings in Montana have varied from $47 million in 1932 to $417 million in 1948.[1] In recent years receipts from livestock and from crops have been approximately equal. Cash receipts in Montana, while following the national pattern, have tended toward greater fluctuations, falling lower in times of depression and rising higher in years of general agricultural prosperity. (See Chart 8). Fluctuations in real farm income, of course, have been much smaller because of price changes. Since 1940, however, Montana farmers and ranchers have consistently been in a better position than the average nationally, and this has put the state in a more favorable position as to total income.

Agricultural income figures are available for only seven years (see Table 19) but they illustrate again the significance and volatility of farm income. Between 1948 and 1949, for example, agricultural income fell from $307 million to $173 million (43.6 percent) and as a result, total income in the state declined 10.9 percent, even though all other types of income payments increased.

Major Agricultural Products

Montana agriculture is based upon the production of wheat and cattle. In 1949 and 1950, over 70 percent of total cash receipts came from the sale of these two commodities, 35.7 and 41.2 percent from wheat and 34.5 and 31.4 percent from cattle. During World War II, the number

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[1] Including government payments.

Table 19

AGRICULTURAL INCOME[1] IN MONTANA, SELECTED YEARS, 1929-1950

Year	Millions of Dollars	Percent of Total State Income
1929	49	15.1
1940	71	22.2
1944	165	31.0
1946	205	30.6
1948	307	35.0
1949	173	22.1
1950	283	29.5

[1] Consists of net income of farm proprietors, farm wages, and net rents to landlords living on farms.

Source: U. S. Department of Commerce, Office of Business Economics.

of cattle in the state increased rapidly and since the war the decline has not been great. The increasing population on the West Coast has created important new markets for Montana cattlemen and a large proportion of cattle produced in the state now go to the coast states rather than to feed lots in the Middle West. The bulk of the wheat production (mostly winter wheat) takes place in the north central and northeastern parts of the state. With high prices as an incentive, acreage planted to spring and winter wheat reached an all-time high in 1950, with an estimated 5,140,000[1] acres being harvested. Scanty and variable annual rainfall, particularly in the plains area, adds a degree of uncertainty to wheat production in the state. Drought conditions during the twenties and thirties, added to low prices, worked hardships on many dryland wheat farmers, and although in recent years rainfall has been adequate and farming methods have improved, a crop failure is always within the realm of possibility, with its resulting decline in farm income.

Montana is also an important sheep-producing state, although in 1950 cash receipts from the sale of sheep, lambs, and wool amounted to only 5.7 percent of the total. With the present boom in the sheep business due to the world wool situation, it is likely that the number of sheep will increase during the coming years.

Other important Montana agricultural products are barley, sugar beets, hay, alfalfa seed, potatoes, flaxseed, oats, beans, mustard seed, hogs, and dairy and poultry products.

The Trend Toward Larger Units

A trend toward larger farm and ranch units in Montana has existed since 1920. Original acreages under the homesteading laws proved too small for profitable farming and gradually the more successful operators acquired additional land. The advent of power machinery about 1925 greatly accelerated this trend. The average size of farms and ranches in the state increased from 698 acres in 1925 to 1,689 acres in 1950, while the number of units decreased from 46,904 in 1925 to 35,085 in 1950. At the same time, total acreage in farms and ranches (including grazing and pasture land) grew from 32,736,000 in 1925 to 59,247,000 acres in 1950, or approximately 63 percent of the total land area of the state.[2]

The development of larger farm units in Montana has made agriculture a more difficult field to enter and has been largely responsible for the declining rural population in Montana as marginal operators and farm youth have moved to the cities and towns and to other states. Very little suitable land remains which is not included in existing operating units and thus not many new farms and ranches can be established except in areas where irrigation could reduce the size of farm units or where existing units are large enough to permit subdivision.

Since 1940, a shift in favor of owner-operator control of Montana land has also been taking place. In 1937, less than one-third of the farm land in Montana was owned by the farmers who used it. About 35 percent was owned by non-farmers, half of whom lived outside the state, 27 percent was held by corporations, largely as a result of foreclosures during the early thirties, and 6 percent by county governments. Between 1940 and 1946, 85 percent of farm real estate purchases were made by owner-operators, with the result that the land ownership pattern of the state was greatly improved. During the same period, farm mortgage indebtedness was substantially reduced, with a ratio of indebtedness to real estate value of only 6.4 percent in 1945, compared to an average ratio of about 20 percent in the twenties and thirties, and a ratio of 18.9 percent in 1940.[1]

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[1] Preliminary estimate, Montana Department of Agriculture, Labor and Industry and U. S. Department of Agriculture.

[2] U. S. Bureau of the Census.

Development of Irrigation

In contrast to the trend toward larger farm and ranch units is the development of irrigation projects in Montana and the establishment of small, diversified farms. In terms of resources involved and intensity of production, however, these units may be as large as dryland units with much greater acreages. Although the percentage of irrigated cropland is small (about 20.1 percent of total acres harvested in 1949), only three states exceed Montana in total area irrigated, and the crops produced on irrigated land are important to the state. The one-fifth of Montana's cropland which is irrigated accounted in 1949 for 35.7 percent of the total value of crop production. Over 50 percent of all irrigated land is devoted to the production of hay. Other important irrigated crops are sugar beets, seed and canning peas, dry beans, potatoes, wheat, oats, fruit, and berries. The state's dairy industry is also dependent to a large extent on irrigated pastures, and livestock feeding is an important enterprise on many irrigated farms.

A number of manufacturing activities have grown out of the irrigation developments in Montana. The state's sugar factories, creameries, vegetable canneries, and feed and seed companies are dependent to a large extent upon products from irrigated farms.

Irrigation was first developed along the streams where water could easily be diverted. Later, larger and more costly irrigation works were constructed, as a result of cooperative projects, and state and federal reclamation and Indian irrigation projects.

Although irrigation projects have met with varying success in Montana, proper utilization of irrigated lands can help achieve a more stabilized agriculture. Irrigation can provide opportunities for farmers and ranchers on marginal dryland units and can help to stabilize farm income by eliminating some of the hazards of non-irrigated farming and making possible a diversification of crops. Irrigation programs also offer opportunities for larger numbers of people within an area and aid in promoting community stability. In the thirties, most irrigated counties in Montana gained in population while many non-irrigated agricultural counties suffered sharp declines.

Federal reclamation projects presently underway and scheduled to be completed during the next decade will provide water for some 233,000 acres in eastern Montana. This figure does not include state or private projects or federal projects in western Montana. The Bureau of Reclamation estimates that 1,460 new farm units may be established as a result of the projects mentioned above. Based on 1939-1944 agricultural prices, an annual increase of $10,083,000 in crop and livestock sales and annual increased farm operating expenses of $7,378,000 are anticipated. In addition, the establishing of 1,460 new families—many of whom may come from outside the state—on irrigated farms will create a demand for goods and services which should result in new covered employment. New processing plants may be necessary to take care of the increased produce from the farms. Thus new irrigation projects may have a far-reaching effect on the economies of the areas where they are located.

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[1] Montana State College Agricultural Experiment Station, Bulletin 440, "Changing Aspects of the Farm Real Estate Situation in Montana, 1940 to 1946," by Layton S. Thompson, January 1947.

The above figures assume that funds for scheduled projects will be available. In the event of an extended emergency or all-out war, appropriations may be reduced and completion of the projects postponed, with the probable exception of those programs which will contribute to the hydroelectric power supply.

Employment

Although agricultural employment is not covered by unemployment insurance, it is of importance in any study of employment in the state because of the number of workers involved, the income derived, the frequent shifting of workers between farming and industry, and the possible effects of any change in employment opportunities in agriculture on covered employment.

Total agricultural employment, including farm operators and hired workers, is estimated to have declined about 11.2 percent between April 1940 and April 1950. In April 1940, agricultural workers numbered 59,800, accounting for 26.6 percent of the total labor force and 32.2 percent of total employment; by 1950, their numbers are estimated to have declined to 53,100 or 21.6 percent of the labor force and 23.1 percent of total employment.[1] Of this total, it is estimated that 42,300 were family workers, including self-employed farm operators and other members of farm families, and 10,800 were hired workers.

The decline in agricultural employment in Montana can be attributed in large part to the increased mechanization which took place during the forties and greatly reduced the manpower required for the production and harvesting of crops. The growth in the average size of operating unit and the resultant smaller number of farms and ranches in the state were also contributing factors, particularly in the number of family workers.

Agricultural labor, so far as hired workers are concerned, is highly seasonal. Unfortunately, no monthly data are available on agricultural employment. However, some indication of the fluctuation in employment between different seasons of the year may be obtained through a comparison of Census of Agriculture figures for the weeks of September 24-30, 1939, and March 24-30, 1940. In September 1939, 28,600 hired workers were at work on farms; by March 1940, the number had declined 53.1 percent to 13,400. The number of seasonal workers required has, of course, also declined with the increased mechanization since 1940. In the sugar beet harvest, for instance, most of the harvesting was done by hand in 1940, whereas today machines are doing an increasingly large part of the work. Many of the seasonal agricultural workers come into Montana from other states, particularly to the south, or from Mexico, and leave as soon as their work is completed.

Outlook for Montana Agriculture

The demand for agricultural products will remain high and is likely to increase for a considerable period. Thus farm production in Montana may be expected to continue at high levels, unless a drought should occur.

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[1] Estimate by Bureau of Business and Economic Research, Montana State University.

Prospects for the expansion of Montana's livestock industry seem particularly good, not only because of the increased demand from the armed forces but because of the increasing population of the western states and the growing market which they offer to Montana cattlemen. Little potential wheatland remains in the state and while production will remain high, it may be that the livestock industry will surpass wheat as a source of agricultural income in the future.

With the prospect of continued good prices for their products, Montana's farmers seem to face an extended period of prosperity, barring the recurrence of a series of drought years such as those in the thirties. While it is impossible to predict weather cycles, the long series of good years which Montana has enjoyed leads some observers to believe that a drought may be due. Such an event during the next few years in a setting of national inflationary prosperity could be very serious, with operating costs remaining high and income drastically reduced. In paying off mortgages carried over from the thirties and investing in badly needed farm equipment and home appliances, the average Montana rancher has not built up a large enough backlog of savings to operate much longer than a year without going into debt. Thus a two- or three-year drought period in Montana could have serious repercussions upon the entire economy.

Agricultural employment will not continue to decline as it has during the past decade. Great progress has been made in the mechanization of farms and ranches in Montana during the past decade and it is unlikely that the number of hired workers required can be reduced much further, except in the case of seasonal workers in the beet fields. The trend toward larger farm units may continue, thereby reducing the number of family workers, but at a slower pace than previously. In recent years, farm operators have tended to hire more work done and the number keeping year-round workers has increased. This tendency will probably continue as long as farm prices remain high. The inclusion of agricultural workers in the social security program may also have some influence in keeping workers on farms. As the war emergency continues, or if an all-out war develops, it is probable that the experience of World War II, when agricultural labor was extremely scarce, may be repeated.

VI. The Mining Industry

Mining and related activities constitute one of the leading sources of income and employment in Montana. Principal minerals produced[1] are copper, zinc, coal, silver, lead, manganese, and gold.

While mineral resources and production are widely scattered throughout the state, there is a heavy concentration in Silver Bow County, the location of the Butte district. This county was the origin of almost 87 percent of the total value of production of metals in Montana during the period 1934-1949 and nearly 94 percent in 1949. During 1950 the mines in Silver Bow County produced 99 percent of the copper output of the state, 94 percent of the zinc, 80 percent of the lead, 91 percent of the silver, and 45 percent of the gold. Only underground mining is practiced in the Butte district. This is more costly than the open-pit method in use in Utah, Arizona, and Nevada.

At the Anaconda reduction works copper ore is concentrated and smelted, and zinc ore is concentrated for the electrolytic zinc plants at Anaconda and Great Falls. Large amounts of sulphur are found in the sulphide ores of copper, zinc, and lead. Some of the sulphur in the Butte ore is converted into sulphuric acid at Anaconda and used together with phosphate rock brought in from Idaho in the manufacture of phosphate fertilizer.

The reduction works at Great Falls includes an electrolytic zinc plant, copper refineries, and a rod and wire mill. In the electrolytic zinc plant, zinc concentrates from Butte ores are treated, and also custom concentrates from Idaho, Utah, and elsewhere. Substantial amounts of cadmium, indium, and other metals are recovered. Residues containing lead, silver, and gold are shipped to East Helena for smelting.

The copper refinery at Great Falls treats blister copper received from Anaconda. This refinery includes both an electrolytic plant and a furnace refinery. Capacity is sufficient to handle maximum Butte copper output to the point of shapes for fabricating plants.

Principal Mineral Products[1]

Most of Montana's metals are found in mixed sulphide ores which contain varying proportions of gold, silver, copper, lead, and zinc. Copper has long been the principal metal produced in the state, and about 95 percent of it has come from the Butte district. Mine production of this metal in 1950 amounted to 54,478 short tons, valued at $22.7 million.

The second most important metal in Montana, from the standpoint of value of current output, is zinc. The Butte district has been the origin of about 85 percent of the output to date. In addition to the zinc from the zinc-lead ore in this district, zinc is recovered from manganese ore in substantial amounts. The mine production of Montana zinc in 1950 amounted to 67,678 short tons, valued at $19.2 million.

The largest single producer of lead in the state is in Lewis and Clark County, although the bulk of the state's output is from the Butte district. Most of the lead ores smelted in East Helena are shipped in from outside the state, largely from the Coeur d'Alene district in Idaho. Montana mines produced 19,617 short tons of lead in 1950, with a value of $5.3 million.

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[1] Not including petroleum and petroleum products, which are discussed in Chapter VII.

Table 20

PRODUCTION OF PRINCIPAL MINERAL PRODUCTS IN MONTANA, 1935-1950

Year	Copper (short tons)	Zinc (short tons)	Lead (short tons)	Silver (000 troy oz.)	Gold (troy oz.)	Manganese Ore (short tons)	Manganiferous Ore (short tons)	Coal (short tons)
1935	77,479	54,781	15,589	9,323	151,088	12,122	7,636	2,758,906
1936	109,544	49,717	19,059	11,601	180,209	18,431	22,743	2,988,524
1937	144,528	39,168	17,957	11,812	202,252	29,953	22,019	2,965,193
1938	77,213	8,844	9,327	6,404	203,313	13,368	506	2,732,050
1939	97,827	34,799	16,555	9,088	264,173	12,476	2,376	2,803,749
1940	126,391	52,587	23,036	12,361	272,602	21,664	4,051	2,867,200
1941	128,036	60,710	21,259	12,387	246,475	54,565	4,988	3,253,724
1942	141,194	54,715	26,050	11,188	146,892	130,086	15,468	3,828,682
1943	134,525	37,606	16,324	8,450	59,586	138,115	2,041	4,833,049
1944	118,190	36,127	13,105	7,093	50,021	159,889	781	4,844,049
1945	88,506	17,403	9,999	5,942	44,597	151,930	5,057	4,466,788
1946	58,481	16,770	8,280	3,273	70,507	137,522	3,816	3,722,926
1947	57,900	45,679	16,108	6,326	90,124	129,689	3,671	3,177,890
1948	58,252	59,095	18,411	6,931	73,091	130,184	4,135	2,897,590
1949	56,611	54,195	17,996	6,327	52,724	122,382	5,517	2,766,003
1950	54,478	67,678	19,617	6,591	51,764			

Source: U. S. Bureau of Mines.

Silver is still one of the principal metals mined in Montana, although its importance, both absolutely and relatively, is less than before World War II. About 75 percent of Montana's total silver output has been mined in the Butte district. Silver is now produced in Montana almost entirely as a byproduct of copper and zinc. The output in 1950 was about 6.6 million troy ounces, with a value of nearly $6 million.

Prior to World War II, gold was one of the two or three principal mineral products of Montana, ranking in second or third place as far as value was concerned. Because of the closing of gold mines during the war, gold mining suffered a serious setback from which it has not recovered. Production was at a postwar high in 1947, but continued to decline through 1950. In the latter year, the output was 51,764 troy ounces, valued at about $1.8 million.

Manganese was produced in small quantities in Montana before World War II, but about 90 percent of the manganese used in the United States was imported. When imports were disrupted by the war, operations were started at two Butte mines. The only other commercial development in the state is at Philipsburg, although manganese ore occurs in other parts of the state.

The carbonate ore from the Butte mines is concentrated at the Anaconda smelter and the concentrate is roasted to produce high-grade manganese oxide nodules. About half of this nodule production is sold direct to the steel companies, and the balance is used to produce ferromanganese in electric furnaces at Anaconda and Great Falls. Small amounts of the metallurgical ore have been produced at Philipsburg. This has been concentrated and sintered in Butte. Philipsburg is principally the source of manganese dioxide, which is used in dry batteries. In 1949, 122,382 short tons of manganese ore, valued at more than $5 million, as well as 5,517 short tons of manganiferous ore were produced in Montana. About 97 percent of the 1949 production of manganese in the United States was from Montana.

Montana has extensive coal deposits, particularly lignite. During the 15-year period, 1935-1949, 51 percent of the coal mined in Montana came from Rosebud County in eastern Montana. Adjacent Musselshell County produced 25 percent of the state's output, while Carbon and Cascade counties accounted for about 12 percent and 10 percent, respectively. Nearly 2.8 million short tons of coal, valued at about $6.3 million, were mined in the state during 1949.

Phosphate rock is mined in Powell County near Garrison and Avon, and fields are known to exist in other parts of the state, including Granite, Silver Bow, Beaverhead, and Madison counties. The rock from the Garrison and Avon quarries is exported to Trail, British Columbia, where it is used to manufacture fertilizer.

In the fall of 1951 a new electric furnace plant at Silver Bow, about six miles west of Butte, began the production of elemental phosphorus. Phosphate rock is brought by rail from Maiden Rock, south of Butte. The phosphorus is shipped to processing plants in Illinois and California, to be converted into phosphates. Phosphates are widely used in foodstuffs, detergents, and pharmaceuticals. Phosphorus also has numerous military uses—in incendiary bombs, shells, antipersonnel bombs, and smoke-screen shells and bombs.

Vermiculite has been produced for many years about seven miles northeast of Libby in Lincoln County, where high-grade deposits are

Table 21

VALUE OF PRINCIPAL MINERAL PRODUCTS IN MONTANA, 1935-1950

(thousands of dollars)

Year	Copper	Zinc	Lead	Silver	Gold	Manganese Ore	Mangan-iferous Ore	Coal
1935	12,861	4,821	1,247	6,701	5,288	340	32	4,146
1936	20,156	4,972	1,753	8,985	6,307	487	86	4,437
1937	34,976	5,092	2,119	9,137	7,079	785	115	4,423
1938	15,134	849	858	4,140	7,116	451	2	4,106
1939	20,348	3,619	1,556	6,169	9,246	......[1]	....[1]	4,092
1940	28,564	6,626	2,304	8,790	9,541	......[1]	....[1]	4,162
1941	30,216	9,106	2,424	8,808	8,627	......[1]	....[1]	4,830
1942	34,169	10,177	2,687	7,956	5,141	......[1]	....[1]	6,222
1943	34,976	8,123	2,449	6,009	2,086	......[1]	....[1]	8,454
1944	31,911	8,237	2,097	5,044	1,751	5,985	16	9,276
1945	23,897	4,003	1,720	4,225	1,561	6,147	....[1]	8,421
1946	18,948	4,092	1,805	2,645	2,468	4,643	....[1]	6,556
1947	24,318	11,054	4,639	5,725	3,154	4,153	....[1]	6,507
1948	25,281	15,719	6,591	6,273	2,558	4,362	....[1]	6,430
1949	22,305	13,440	5,687	5,726	1,845	5,068	....[1]	6,312
1950	22,663	19,221	5,297	5,965	1,812			

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[1] Value not reported separately.

Source: U. S. Bureau of Mines.

extensive. Deposits occur also in Madison County and other areas. Production has begun recently in Ravalli County, east of Hamilton. Vermiculite, when expanded by heating, is used as an insulating material, in the manufacture of wall board, light weight plasters, masonry, and concrete, and for decorating wall paper.

Although Montana chromite deposits are not now being exploited, they should be mentioned because of the strategic importance of this mineral and the possibilities for future development. The principal known deposits are in Stillwater and Sweetgrass counties, and other deposits occur in Carbon, Park, and Madison counties.

During World War II, the Defense Plant Corporation developed chromite deposits in Stillwater, Sweetgrass, and Carbon counties. Three mills were built which were put on a standby basis before the end of the war. Chromite is used principally in steel alloys and as a refractory, and also in the chemical industry. United States needs have been supplied almost entirely from foreign sources.

Production and Prices

The mine production and value of Montana's principal minerals (excluding petroleum) since 1935 are shown in Tables 20 and 21. Table 22 compares the value of total mineral production in Montana with that of the country as a whole.[1] In value copper is the most important metal mined in Montana, and next in importance are zinc, silver, lead, manganese, and gold.

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[1] Including production of crude petroleum, natural gas, and natural gasoline, valued at $25.8 million in Montana in 1949. See Chapter VII for discussion of petroleum industry.

Table 22

VALUE OF TOTAL MINERAL PRODUCTION, MONTANA AND THE UNITED STATES, 1935-1950

(thousands of dollars)

Year	Montana	United States	% Montana of U.S.
1935	52,097	2,910,900	1.8
1936	65,569	4,556,800	1.4
1937	82,087	5,413,400	1.5
1938	48,603	4,362,900	1.1
1939	63,344	4,914,200	1.3
1940	79,488	5,613,900	1.4
1941	86,583	6,878,000	1.3
1942	96,682	7,576,300	1.3
1943	85,208	8,071,000	1.1
1944	82,290	8,417,000	1.0
1945	68,829	8,141,000	0.8
1946	62,114	8,896,000	0.7
1947	87,735	9,610,000	0.9
1948	103,841	12,273,000	0.8
1949	97,756	10,554,000	0.9
1950		11,725,000[1]	

[1] Preliminary estimate.

Source: U. S. Bureau of Mines.

The "Greater Butte Project," now in preparation at an estimated cost of $27 million, will increase the output of the Butte district and prolong its productive life. This is a project to mine large areas of lower-grade copper-bearing minerals left between and around the veins of high-grade ore. This low-grade ore will be taken out by the use of large-scale block-caving methods. It is expected that the increase in output of ore per man will more than offset the lower copper content and result in lower costs per pound of copper. Production from the Greater Butte Project is expected to begin in the spring of 1952.

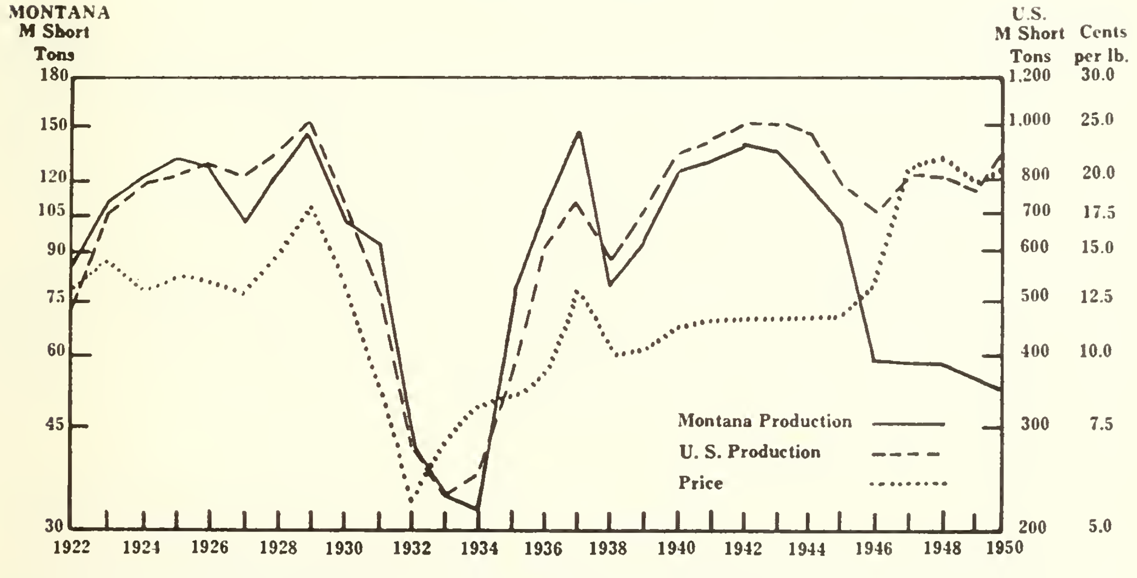
The output of mineral products in Montana has been greatly influenced by price changes, as might be expected. However, Montana production has tended to fluctuate more from year to year than production in the country as a whole, and the rate of change in response to price changes has often been greater in this state.

The relationship between copper production and prices since 1922 is shown in Chart 15. It will be seen that United States production has followed price changes very closely throughout the period. The only apparent exception was during World War II when price ceilings kept copper prices constant but production increased to meet the war-stimulated demand. Actually, copper prices during the war were substantially above the official price shown on the chart. This was the base price, but producers were paid premium prices for output above their quotas for each period.

The changes in copper production in Montana almost paralleled changes in United States production until the end of World War II. Since 1946, however, the trend of Montana production has been downward in the face of much higher prices, whereas countrywide production has responded to price changes. The relatively low level of Montana output in 1947 and 1948 has been attributed primarily to a shortage of mine labor in this state. The 1949 output followed the downward move-

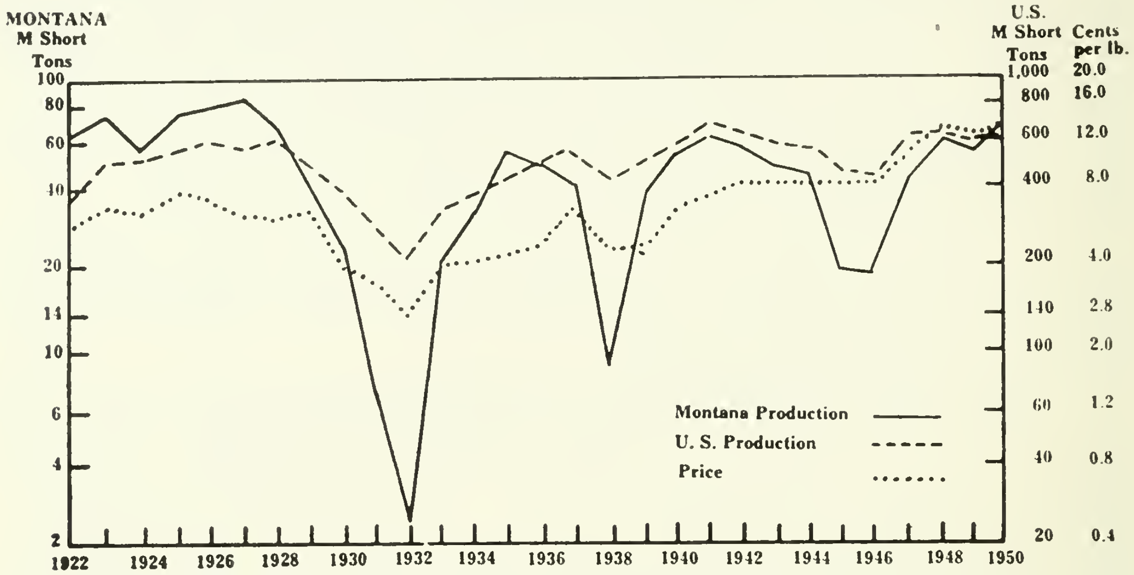
Chart 15
COPPER PRODUCTION AND PRICES, 1922-1950

(Ratio Scale)



Sources: Production, U. S. Bureau of Mines; Prices (electrolytic, refinery, annual averages), Engineering and Mining Journal.

Chart 16
ZINC PRODUCTION AND PRICES, 1922-1950
(Ratio Scale)



Sources: Production, U. S. Bureau of Mines; Prices (New York, annual averages), Engineering and Mining Journal.

ment of United States production as prices declined sharply. Prices were up in 1950 and United States output reached a postwar high. In Montana, however, 1950 production was below that of 1949. This appears to have been caused principally by (1) a continuing shortage of mine labor, and (2) a fire in one of the mines which kept it closed for some months. Montana production is on the increase in 1951.

Data on zinc prices and production are shown graphically in Chart 16. In general there has been a positive correlation between production and prices, for both Montana and the United States. However, the Montana reaction has been more violent, especially the downward movement in response to price declines.

During World War II all the Montana zinc mines of the Anaconda Copper Mining Company were closed, and the miners were put on copper. The refineries at Great Falls and Anaconda continued operation at capacity by using purchased concentrates which were imported into Montana from numerous mining areas. Montana zinc production has been spurred to higher levels by price increases since the war. Again, the output reaction has been sharper than in the country as a whole.

Lead is commonly found in the same ore-bearing materials as zinc; consequently the two metals fall and rise together in output. With respect to the correlation between production and price, zinc and lead follow about the same pattern, but the variation in lead output has been less than in zinc since 1935. (See Chart 17.)

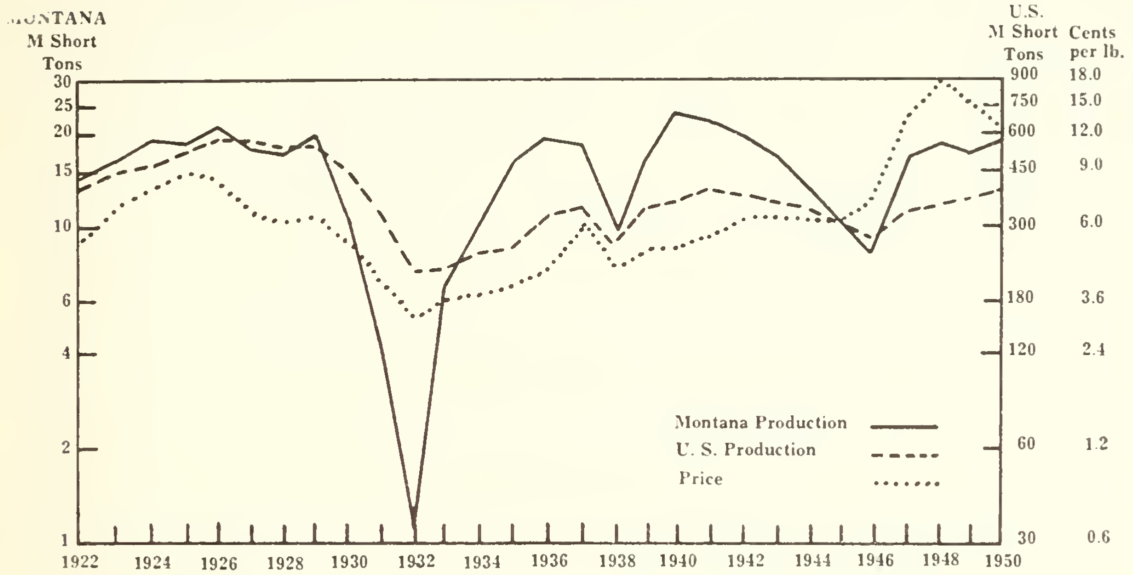
Employment and Earnings

Mining and related activities contribute substantially to employment and income in the state of Montana. Table 23 shows the employment in the state which was directly dependent upon mining, during the period 1939-1950. Approximately 7,800 workers were engaged in the mining of metals in 1950 (monthly average during the year). About 800 more

Chart 17

LEAD PRODUCTION AND PRICES, 1922-1950

(Ratio Scale)



Sources: Production, U. S. Bureau of Mines; Prices (New York, annual averages), Engineering and Mining Journal.

were in coal mining and 500 in other nonmetallic mining. In addition to the miners, about 4,000 were employed in smelting and refining activities, making an average of 13,100 employed in mining, smelting, and refining (exclusive of petroleum) in 1950. This number constituted 8.9 percent of total nonagricultural employment and 12.9 percent of all workers covered in the unemployment compensation program.

These employment figures alone indicate the significance of the mining industry to Montana. Furthermore, mining and related activities are concentrated in a few areas in the state. Most of the mining is still done in the Butte district, and the bulk of the processing takes place at Anaconda and Great Falls. A decline or expansion of mining activities is a matter of primary concern in these cities. It is estimated that about half the people of Silver Bow County (employees and their families) are directly dependent upon mining in the Butte district, and that smelting and refining and related operations in Anaconda directly support close to three-fourths of the people in Deer Lodge County. Direct dependence on metal processing in Great Falls probably runs 10 to 12 percent of the population of Cascade County.

The economic significance of mining employment is further fortified by the fact that earnings are relatively high. Evidence of the high wage position of this industry is presented in Table 24. While the volume of employment in the mining industry in 1950 constituted 12.9 percent of total covered employment, total wages paid were 15.6 percent of the total wages of all covered workers. A similar relationship existed throughout the period 1939-1950, with wages always being a substantially greater proportion of the total than were numbers employed. The relatively high wage incomes in mining and closely related industries serve to intensify the secondary effects of fluctuations in mining employment on total income and employment.

Table 23

AVERAGE COVERED EMPLOYMENT IN THE MINING INDUSTRY IN MONTANA, 1939-1950[1]

(thousands of workers)

Year	Metal Mining	Coal Mining	Other Nonmetallic Mining	Smelting and Refining[2]	Total	Percent of Total Non-agricultural Employment	Percent of Total Covered Employment
1939	7.4	1.3	.3	3.3	12.3	12.1	18.0
1940	9.9	1.2	.3	3.7	15.1	14.0	20.5
1941	11.6	1.3	.3	4.6	17.8	15.9	23.1
1942	12.3	1.5	.4	4.8	19.0	16.4	24.2
1943	11.2	1.5	.3	4.6	17.6	14.6	23.8
1944	8.0	1.4	.5	4.0	13.9	12.3	19.3
1945	6.0	1.3	.4	3.7	11.4	10.1	15.9
1946	5.8	1.2	.5	3.9	11.4	9.1	13.7
1947	6.7	1.0	.5	4.2	12.4	9.1	13.5
1948	7.2	.9	.6	4.3	13.0	9.1	13.2
1949	7.1	.8	.5	4.3	12.7	8.8	12.9
1950	7.8	.8	.5	4.0	13.1	8.9	12.9

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[1] Exclusive of petroleum and natural gas and petroleum products.
[2] Nonferrous metals.

Source: Unemployment Compensation Commission of Montana.

Table 24

TOTAL WAGES PAID TO COVERED WORKERS IN THE MINING INDUSTRY IN MONTANA, 1939-1950[1]

(millions of dollars)

Year	Metal Mining	Coal Mining	Other Nonmetallic Mining	Smelting and Refining[2]	Total	Percent of Total Covered Wages
1939	12.4	1.7	.3	6.5	20.9	23.1
1940	18.1	1.8	.4	6.8	27.1	26.8
1941	21.2	2.1	.4	8.4	32.1	29.2
1942	27.7	2.9	.7	10.8	42.1	32.3
1943	29.1	4.0	.6	12.4	46.1	33.7
1944	22.7	4.1	1.1	11.4	39.3	28.4
1945	16.6	3.9	1.0	10.1	31.6	22.5
1946	16.4	3.5	1.2	10.4	31.5	18.2
1947	21.0	3.5	1.7	12.0	38.2	17.8
1948	24.7	3.2	2.0	13.4	43.3	17.0
1949	23.7	2.8	2.0	13.8	42.3	15.7
1950	27.4	2.6	1.9	13.7	45.6	15.6

---

[1] Excludes petroleum production and refining.
[2] Nonferrous metals.

Source: Unemployment Compensation Commission of Montana.

Stability of Employment

The ratios in Table 25 show benefit payments as a percent of taxable wages and give some indication of the extent of unemployment. Comparison with Table 18, page 40, will serve to measure the stability of employment in each segment of the mining industry compared with all industries covered by unemployment compensation.[1]

In metal mining and smelting and refining, for the entire period, unemployment benefits were only 0.36 percent of taxable wages. This is one-half the ratio of 0.72 for all covered industries. The ratio was smaller than in all industries for each fiscal year except 1945-1946. Using the same measure, nonmetallic mining was less stable than metal mining and smelting and refining combined, but somewhat more stable than all covered industries. Coal mining was less stable than all industries, with benefits averaging 0.94 percent of taxable wages. However, since 87 percent of the taxable wages in the four categories was in metal mining and smelting and refining, it may be concluded that mining employment as a whole has been relatively stable.

Further evidence of employment stability is seen in the seasonal patterns of employment. In metal mining, the seasonal fluctuation in employment during the war years 1944 and 1945[2] ranged from 4.8 percent above the average in March to 6.3 percent below the average in July. (See Chart 18.) In absolute terms, the variation from the employment peak in March to the low point in July was about 900 workers. In the average year during 1946-1949, the seasonal fluctuation was less than in wartime. During this postwar period, employment at

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[1] In Table 18 and in other tables in the labor force and employment chapters, the mining group corresponds to the industrial classification code of the United States government and includes metal and coal mining, petroleum and natural gas production and nonmetallic mining. For purposes of this chapter, the classification has been altered to include all mining and smelting and refining, except petroleum and its products, which are discussed in Chapter VII.

[2] A detailed industry breakdown of monthly employment estimates prior to 1943 is not available. Because of the method of computing seasonal variation, 1944 is the earliest year for which results could be obtained.

Table 25

RATIO OF BENEFIT PAYMENTS TO TAXABLE WAGES UNDER MONTANA UNEMPLOYMENT COMPENSATION LAW, MINING INDUSTRY, FISCAL YEARS, 1943-1950

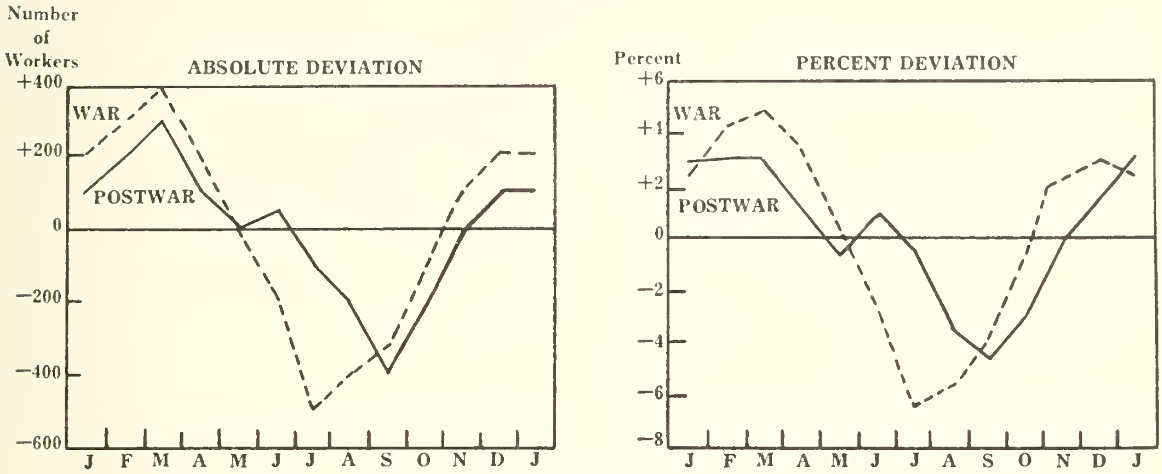
Fiscal Year	Metal Mining and Smelting and Refining[1]	Nonmetallic Mining	Coal Mining
1942-43	.04	.24	.18
1943-44	.06	.07	.05
1944-45	.04	.19	.02
1945-46	.78	1.12	.95
1946-47	.32	.58	1.10
1947-48	.32	.45	1.56
1948-49	.39	.55	1.59
1949-50	1.08	1.47	4.00
Ratio for 8-year period	.36	.63	.94

[1] Nonferrous metals.

Source: Unemployment Compensation Commission of Montana.

Chart 18

TYPICAL SEASONAL VARIATION OF COVERED EMPLOYMENT IN METAL MINING IN MONTANA, WAR AND POSTWAR YEARS, 1944-1949



Note: War years=1944-1945. Postwar years=1946-1949. Zero line equals average employment during each period.

Source: Unemployment Compensation Commission of Montana.

the February-March peak was 3.1 percent above the average, and at the low point in September it was 4.6 percent below the average. This represented a variation of 700 workers, from the March high of 300 above the average to the September low of 400 under the average.

It is generally believed in the industry that the seasonal variation in metal mining is caused principally by changes in the number of workers available. Seasonal fluctuation in employment from this cause would not involve any significant increase in unemployment.

On an annual seasonal pattern, workers begin to drift away from the Butte mines in the spring to take more desirable and sometimes more lucrative jobs on farms and elsewhere. As the summer goes on, this movement out of the mines is accelerated until harvest time, after which the miners begin to go underground again for the winter.

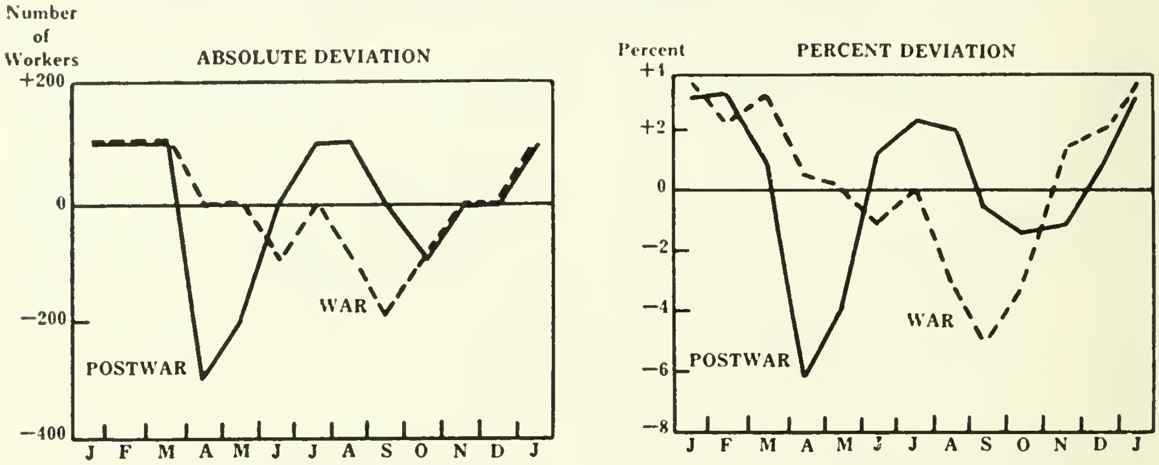
The summer decline was greater during the war years, probably because of the additional pull of jobs in war plants in nearby states. Probably the earlier wartime trough can be ascribed to a decline in the importance of harvesting in attracting miners.

It should be noted that the seasonal pattern in metal mining runs counter to that of other nonagricultural and covered industries, where the low point in employment occurs in February and March and the peak is reached in August and September.

Percentage seasonal deviations were more marked in coal mining and nonmetallic mining, but the variations were not significant, because of the small number of workers involved. The postwar seasonal pattern was about the same as that of the war years.

In the smelting and refining of nonferrous metals, there is no serious seasonal unemployment problem. The magnitude of employment fluctuations was only about 300 in the average war year and 400 in the postwar period through 1949. (See Chart 19.)

Chart 19
TYPICAL SEASONAL VARIATION OF COVERED EMPLOYMENT IN SMELTING AND REFINING IN MONTANA, WAR AND POSTWAR YEARS, 1944-1949



Note: Smelting and refining of nonferrous metals. War years=1944-1945. Nonwar years=1946-1949. Zero line equals average employment during each period.

Source: Unemployment Compensation Commission of Montana.

Outlook for Production and Employment

The outlook for production of Montana minerals for the next few years appears to be generally favorable. A number of the metals and nonmetallic minerals have great strategic value in the mobilization program, and it now seems likely that the demand will continue high for some time to come. This would mean sustained employment, and expansion in some areas.

It is true that rising copper prices have not stimulated additional output in Montana since World War II, and production actually declined in 1949 and 1950. National output dropped in 1949 as prices fell, but Montana was the only copper-producing state to suffer a decline of output in 1950.[1]

As stated above, the low level of production in 1950 apparently was caused principally by a continued labor shortage and a mine fire. There are reasons to expect some improvement in production in the near future, and sustained or increased employment for a considerable period. Daily average output for the first eight months of 1951 was 11 percent above the same period of 1950.

There are no reported signs of diminution of the supply of high-grade copper ore. Mining is already down to the 4,600 foot level, and it is stated that mines can be profitably sunk to much deeper levels. The Greater Butte Project will be an additional resource superimposed on the vein mines, and the exploitation of the lower-grade ores will result in substantial additional output of copper.

The production of zinc and lead in Montana has increased greatly since 1946 in response to higher prices. Like copper, these are important strategic materials, the scarcity of which will doubtless cause further expansion in output. An increase in zinc production is accompanied by expansion in the output of lead and manganese, because of the mixture in the ores.[1] Both lead supplies and lead consumption in the United States reached an all-time high in 1950. During the first eight months of 1951, daily average zinc production in Montana was 60 percent higher than in the corresponding period of 1950, and lead output was up 34 percent.

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[1] It should be noted, however, that the significant increase in Montana zinc output in 1950 resulted in a combined copper and zinc production substantially higher than in 1949.

Manganese production has declined somewhat during the postwar period but possibilities exist for an increase in the output of this strategic mineral in Montana, which is nearly the sole source of the domestic supplies in the United States. Before the war, reserves of oxide ore in the Philipsburg district were estimated at 600,000 tons plus large amounts of carbonate ore below the zone of oxidation. Reserves of oxide ore in the Butte district have been estimated at 132,000 tons. Estimates of carbonate ore in Butte are not available, but it is known that the quantity of low-grade ore suitable for concentration is very large. Because of its importance in steel manufacturing, it may be expected that the demand for manganese will continue to increase.

Montana has a tremendous quantity of coal deposits, some of which may be worked more intensively as industrial production is stepped up and other fuels become increasingly scarce. Total reserves in the state are estimated at over 200 billion short tons, not including unmapped areas. The estimates, made by the U. S. Geological Survey, are 2.4 billion short tons of bituminous coal (mostly in Carbon and Musselshell counties); 132.2 billion short tons of sub-bituminous coal (principally in Big Horn, Powder River, and Rosebud counties); and 87.5 billion short tons of lignite (the largest deposits in McCone, Richland, Dawson, Wibaux, Sheridan, Roosevelt, and Daniels counties).

Only about 157 million short tons of coal have been mined in Montana since 1880. It will be seen that the coal reserves of the state have scarcely been touched, and more intensive exploitation of the more accessible deposits is possible, particularly if increased industrialization takes place. However, the more optimistic forecasts of industrial development are based largely on the development of cheap hydroelectric power.

The Bureau of Mines in August 1951 announced a new process for the use of lignite and other low-grade non-coking coals in the generation of electric power and the production of coal tar products. At the same time it was announced that the new process soon would be applied commercially to provide fuel for power generation in a new aluminum plant in Texas. This development may hold great promise for Montana, with its huge reserves of lignite and sub-bituminous coal.

Great reserves of high-grade vermiculite exist in various areas in the state. Because of its industrial importance, further expansion may be expected.

It seems likely that the phosphate industry in Montana, for the production of fertilizer and industrial phosphates, will continue to expand. Vast reserves of phosphate rock are known to exist in the state, and the utilization has developed greatly in recent years. The new plant at Silver Bow represents the first manufacturing of elemental phosphorus for industrial phosphates in Montana. The present scarcity of phosphorus is due principally to the increasing use of detergents, and there is no sign of any slackening of this civilian demand.

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[1] In 1950, for example, nearly half of the zinc ore extracted in Montana was zinc-lead ore and 14 percent was manganese-zinc ore.

Montana possesses extensive deposits of chromite which have not been exploited except for a brief time during World War II. Deposits of chromite ore in Stillwater and Sweetgrass counties have been estimated at 10 to 20 million tons. Estimates are not available for other reserves in Carbon, Park, and Madison counties. It is claimed that Montana chromite is satisfactory for certain processes in manufacturing chromium alloy steels and in making chromium chemicals.[1] The principal impediment to the development and use of Montana chromite appears to be the high delivered cost compared to the cost of the imported metal. In view of the international situation, however, and the increasing use of chromium in various forms, the development of Montana chromite resources again becomes a possibility.

In conclusion, it appears that the volume of production and employment in mining and related activities in Montana will expand to some extent over the next decade. Certain sectors of the mining industry are relatively high-cost and consequently sensitive to declines of the business cycle. Nevertheless, the relatively low ratios of unemployment benefits to taxable wages reveals the cyclical stability of the industry as compared to all covered industries in the state. Also, mining employment has displayed comparatively little seasonal variation.

Furthermore, there are developments which will make Montana's mining industry more stable. For example, the Greater Butte Project is expected to reduce the cost of copper production and thus make it less sensitive to price declines. Some of the new processing industries such as the phosphates industry may be less sensitive to depressions and thus contribute to economic stability. For at least the immediate future the demands of the rearmament program will assure a stable output for Montana's strategic minerals.

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[1] See John M. Conrow, "Factors Affecting Chromite Production in Montana," in "De Re Metallica," Montana School of Mines, Butte, Montana, February 1945.

VII. The Petroleum Industry

The oil industry is relatively new to the state of Montana, dating only from the 1920's. The Montana portion of the Elk Basin field in Carbon County on the Wyoming border was discovered in 1915; however, no other major fields were discovered until the twenties, when the Cat Creek, Kevin-Sunburst, and Pondera fields in northern Montana, just east of the Continental Divide, were discovered. The largest oil field in Montana, the Cut Bank, was discovered in 1931.

Employmentwise, the industry is of less importance than many others, with covered production and refining employment together amounting to only 2.2 percent of total covered employment in Montana in 1950. Other employment created by the production and refining of petroleum, such as that in pipeline transportation, bulk tank stations, and filling stations, would, of course, greatly increase the total employment attributable to the industry.

In 1949, the total value of petroleum and natural gas produced amounted to over $25 million. According to the Census of Manufactures, in 1947 the value added to products in Montana refineries amounted to $7,855,000 or 8.5 percent of value added by all manufacturing in the state.

Petroleum and Natural Gas Production

Petroleum production in Montana has increased substantially during the last decade, although it still amounts to only about 0.5 percent of the United States total. The high point in production in the state was reached in 1948, when 9,382,000 barrels of crude oil were produced, with an estimated value at the wells of $24,210,000. This output represented an increase of 57.4 percent over 1939. Since 1948, annual production has declined, with an output of 9,117,000 barrels in 1949, and 8,108,000 barrels in 1950, 36.0 percent over 1939. The volume of production of crude oil in Montana is not so strongly affected by price as are the other mineral industries of the state. This is partly due to the larger number of producers in the oil industry and to conservation practices. The decline in oil production between 1948 and 1950 was largely the result of the failure to find any additional large reserves in the state, making it unwise from a conservation standpoint to continue production at the 1948 level. Since 1940, twelve new fields have been put into production in Montana, but none of these has yet proved extensive in size. At present, proved recoverable reserves in Montana are estimated at 104 million barrels.[1] At the current annual production rate of about eight million barrels, these reserves would last approximately 13 years. Oil men and geologists, however, consider the prospects good for the discovery of additional oil in the state. Interest in oil prospects in Montana was intensified by the discovery of oil in Alberta, Canada, in 1947, with the thought that the oil structure might extend into Montana. Important discoveries in the Williston basin in 1951 intensified interest in the search for new petroleum sources. It is estimated that about 10 million acres of land in the eastern part of the state are now under oil lease.

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[1] Oil Conservation Board of the State of Montana.

Table 26
PRODUCTION OF PETROLEUM, NATURAL GAS, AND NATURAL GASOLINE AND ALLIED PRODUCTS IN MONTANA, 1935-1950

Year	Petroleum (thousands of barrels)	Natural Gas Marketed Production (millions of cu. ft.)	Natural Gasoline and Allied Products[1] (thousands of gallons)
1935	4,603	19,870	1,739
1936	5,868	23,003	2,071
1937	5,805	24,765	2,296
1938	4,946	21,216	1,768
1939	5,960	23,178	2,161
1940	6,728	26,231	2,603
1941	7,526	28,499	3,966
1942	8,074	31,475	4,517
1943	7,916	31,562	4,664
1944	8,647	32,102	4,768
1945	8,420	31,829	4,726
1946	8,825	30,713	4,597
1947	8,742	34,282[2]	5,756
1948	9,382	36,551	8,447
1949	9,117	35,291	9,724
1950	8,108		10,440

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[1] Includes liquefied petroleum gases beginning 1941.
[2] From 1947 on, includes gas stored and lost in transmission.

Source: U. S. Bureau of Mines; 1949-1950, petroleum, Oil Conservation Board of the State of Montana.

Table 27
VALUE OF PETROLEUM, NATURAL GAS, AND NATURAL GASOLINE AND ALLIED PRODUCTS PRODUCED IN MONTANA, 1935-1949

(thousands of dollars)

Year	**Petroleum**[1]	**Natural Gas**[1]	**Natural Gasoline and Allied Products**[1] [2]
1935	6,150	785	151
1936	7,700	837	100
1937	7,300	924	161
1938	5,190	883	113
1939	5,860	1,041	154
1940	6,660	1,178	162
1941	8,000	1,305	258
1942	8,950	1,467	297
1943	9,500	1,471	290
1944	10,700	1,486	310
1945	10,810	1,499	297
1946	12,710	1,419	292
1947	16,960	1,560	424
1948	24,210	1,696	720
1949[3]	23,600	1,620	589

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[1] Estimated value at wells, for petroleum and natural gas; at plants for natural gasoline.
[2] Includes liquefied petroleum gases beginning 1941.
[3] Preliminary

Source: U. S. Bureau of Mines.

Three fields in the state produced 80.3 percent of the total output in 1949 and 73.8 percent in 1950. They are the Cut Bank and Kevin-Sunburst fields, and the Montana portion of the Elk Basin field. Numerous other small fields—over 20 in all—accounted for the remaining production.

Most of the oil produced in Montana is refined in the state. In 1950, 73.5 percent of the total produced and carried over in storage from 1949 was refined in Montana, 12.2 percent was shipped to other states and Canada and the remainder was stored, used for fuel, or lost.

The production of natural gas is small and has followed petroleum fairly closely. Between 1939 and 1949, the output from Montana fields increased 52.3 percent, amounting to 35,291 million cubic feet in 1949, with a value at the wells of $1,620,000, slightly less than in 1948.

Chief gas-producing fields in the state are the Cut Bank, the Bowdoin in Phillips and Valley counties in northeastern Montana, Cedar Creek in Fallon and Wibaux counties in southeastern Montana, and Kevin-Sunburst. Most of the natural gas produced in Montana is used locally, although gas from the Montana portion of the Cedar Creek field is piped to points in North and South Dakota. Proved recoverable reserves of natural gas in Montana were estimated at 852,605 million cubic feet as of January 1, 1949,[1] or the equivalent of approximately a 20-year supply.

Small amounts of natural gasoline and liquefied petroleum gases are produced as byproducts of the operation of gas wells in the state. The output of these products has increased steadily since 1941, when figures for liquefied petroleum gases first became available, with a total increase to 1950 of 163.2 percent. The 9,724,000 gallons produced in 1949 had an estimated value of $589,000.

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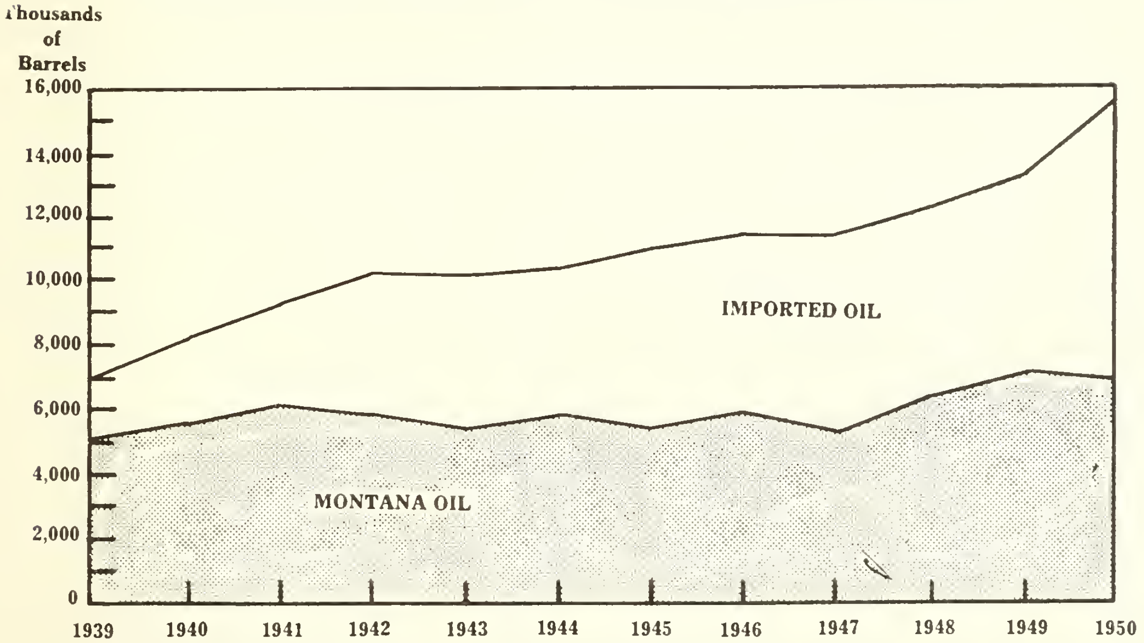
[1] U. S. Bureau of Mines.

Chart 20

PETROLEUM REFINING IN MONTANA, 1939-1950



Source: Oil Conservation Board of the State of Montana.

Petroleum Refining

Oil refining in Montana has grown more rapidly than has the production of oil, due to a great increase in the amount of imported oil refined in the state. Between 1939 and 1950, the total amount of oil refined increased 123.2 percent; at the same time the amount of Montana oil refined increased 34.4 percent and imported oil refined increased 338.2 percent. The bulk of the imported oil refined comes by pipeline from the Wyoming Elk Basin field and is refined in the Billings area, which has become the center of the state's oil refining industry. Other refineries are located in the northern part of the state, near the Cut Bank and Kevin-Sunburst fields. Chief products of Montana refineries are gasoline, light oils, and asphalt. The marketing area extends outside Montana into Idaho, Washington, North and South Dakota, and Wyoming.

Employment and Wages

Covered employment in the petroleum industry is small, seldom averaging more than 2,200 workers per year, or in recent years about 1.5 percent of total nonagricultural and 2.2 percent of total covered employment. The peak was reached in 1944 when 2,400 workers or 3.3 percent of covered employment were employed by the industry. After 1944, employment declined slightly and since 1948 has averaged 2,200 workers, the same as during the period from 1940 to 1942. Thus employment in the industry has failed to keep pace with the growth in total covered employment.

Employment in petroleum and natural gas production alone in 1949 and 1950 was slightly lower than in pre-World War II years, amounting to only 1,200 workers. Employment in refining, however, averaged 1,000 as compared to 700 and 800 before the war.

Seasonal fluctuations in employment in the petroleum industry are very small. In petroleum and natural gas production since 1944, employment has fluctuated during a typical year by about 300 workers. The low point comes in February when winter weather is apt to be at its

Table 28

AVERAGE COVERED EMPLOYMENT IN THE PETROLEUM INDUSTRY IN MONTANA, 1939-1950

(thousands of workers)

Year	Crude Petroleum and Natural Gas Production	Petroleum Refining	Total	% of Total Nonagricultural Employment	% of Total Covered Employment
1939	1.3	.7	2.0	2.0	2.9
1940	1.4	.8	2.2	2.0	3.0
1941	1.5	.7	2.2	2.0	2.9
1942	1.2	1.0	2.2	1.9	2.8
1943	1.3	.8	2.1	1.8	2.8
1944	1.7	.7	2.4	2.1	3.3
1945	1.5	.7	2.2	1.9	3.1
1946	1.5	.8	2.3	1.8	2.8
1947	1.5	.8	2.3	1.7	2.5
1948	1.5	.7	2.2	1.5	2.2
1949	1.2	1.0	2.2	1.5	2.2
1950	1.2	1.0	2.2	1.5	2.2

Source: Unemployment Compensation Commission of Montana.

Table 29
TOTAL WAGES PAID TO COVERED WORKERS IN THE PETROLEUM INDUSTRY IN MONTANA, 1939-1950
(millions of dollars)

Year	Petroleum and Natural Gas Production	Petroleum Refining	Total	Percent of Total Covered Wages
1939	2.0	1.2	3.2	3.5
1940	2.3	1.4	3.7	3.7
1941	2.6	1.4	4.0	3.6
1942	2.3	2.1	4.4	3.4
1943	3.3	2.2	5.5	4.0
1944	4.3	1.9	6.2	4.5
1945	4.0	2.0	6.0	4.3
1946	4.2	2.3	6.5	3.8
1947	4.6	2.6	7.2	3.4
1948	5.3	2.7	8.0	3.1
1949	4.4	3.9	8.3	3.1
1950	4.1	4.2	8.3	2.8

Source: Unemployment Compensation Commission of Montana.

worst. Two peaks in employment occur, in July when the demand for gasoline is increasing and in October and November when the production of fuel oil goes up. Montana's oil refineries operate steadily throughout the year with practically no seasonality in employment. Changes in the amount of oil refined are not necessarily reflected in changes in employment; because of the nature of the refining process there is no definite relationship between output and number of workers.

Wages paid in the petroleum industry are substantially higher than in most other industries in Montana. In 1950, the 2.2 percent of total covered workers in the petroleum industry received $8.3 million or 2.8 percent of total covered wages paid in the state. This figure represented an increase of 159.4 percent over total 1939 wages in the industry.

Table 30
RATIO OF BENEFIT PAYMENTS TO TAXABLE WAGES UNDER MONTANA UNEMPLOYMENT COMPENSATION LAW, PETROLEUM INDUSTRY, FISCAL YEARS, 1943-1950

Fiscal Year	Crude Petroleum and Natural Gas Production	Petroleum Refining	Total
1942-43	.05	.03	.04
1943-44	.03	.03	.03
1944-45	[1]	.03	.01
1945-46	.40	.14	.31
1946-47	.45	.13	.34
1947-48	.26	.09	.20
1948-49	.53	.13	.38
1949-50	1.37	.20	.78
Ratio for 8-Year Period	.38	.11	.28

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[1] Less than .01 percent.

Source: Unemployment Compensation Commission of Montana.

Unemployment compensation payments to workers have been small, amounting to only 0.28 percent of taxable wages for the industry, 0.38 percent for petroleum and natural gas production, and 0.11 percent of taxable wages for refining between the fiscal years 1943 and 1950. In fiscal 1950, however, the ratio for petroleum and natural gas production rose to 1.37 percent. The refining branch of the industry was little affected by the recession which took place in late 1949 and 1950, and benefits amounted to only 0.20 percent of taxable wages during that fiscal year.

Outlook for the Petroleum Industry

The present emergency has greatly increased the demands upon the oil industry. However, any large scale expansion of production of petroleum in Montana is impractical until such time as new reserves are discovered in the state. Unless such discoveries are made, it is unlikely that production of petroleum, and therefore employment in the industry, will expand much beyond present levels. The initial discovery of oil in the Montana portion of the Williston basin is only the beginning of extensive exploratory operations in the area which may well bring large new reserves to light. However, development of new fields takes time and costs are high. Many factors—depth of oil, size of reserves, gravity and other measures of quality, efficiency of production, ease of access, pressure, and the presence of gas—influence the profitability of exploiting new oil discoveries. If reserves in the Williston basin, or in other potential oil areas, prove sizeable and meet the other requirements necessary, increased production and employment will result.

Any substantial increase in oil refining in Montana must be preceded by the construction of new refineries or the enlargement of present facilities. Such a development is a possibility if new oil reserves are discovered. However, with the location of major oil markets at considerable distances from Montana, it is also possible that a good part of the increased oil production might be piped from the fields in crude form to be refined nearer the points of consumption. In any case, some expansion of local refining capacity would probably be justified.

VIII. Contract Construction

The contract construction industry in Montana is of major importance because of the number of workers employed—7.1 percent of nonagricultural employment and 10.4 percent of covered employment in 1950—and because of its extreme seasonality which creates regular unemployment problems. In addition, the construction industry is strongly influenced by changes in the business cycle.

Data on the value of all new construction in the state are available only through 1947, when it amounted to $76.7 million, or 29.3 percent above 1939. Since 1947, it has increased considerably; in 1950, value of new public construction alone amounted to $75.6 million. Table 31 shows the importance of public construction in Montana, particularly prior to 1944 when it amounted to more than 60 percent of the value of all construction in each year except 1941. The bulk of public expenditures for building in the state is devoted to highways and conservation and development, including in recent years Hungry Horse and Canyon Ferry dams and other Bureau of Reclamation projects.

The value of private construction in Montana tripled between 1945 and 1947 as building materials once again became available and as general prosperity in the state encouraged more private building than was undertaken before the war. Largest item in private construction between 1944 and 1947 was building by privately-owned public utilities. Since 1947, the boom in residential building and increasing costs have greatly increased the value of private construction. Reports of the Federal Reserve Bank of Minneapolis indicate that the value of building permits issued in seven leading Montana cities increased each year from 1942 to 1950, with the value of permits issued in 1950 showing a gain of 387.9 percent over 1939.

Table 31

ESTIMATED VALUE OF NEW CONSTRUCTION IN MONTANA, 1939-1950

(millions of dollars)

		Montana			Montana as % of U.S.	
Year	**Total**	**Private**	**Public**	**Total**	**Private**	**Public**
1939	59.3	15.6	43.7	0.7	0.4	1.1
1940	51.4	18.9	32.5	0.6	0.4	0.9
1941	50.1	23.9	26.2	0.4	0.4	0.5
1942	65.5	12.3	53.2	0.5	0.4	0.5
1943	26.7	8.5	18.2	0.3	0.4	0.3
1944	22.3	15.6	6.7	0.4	0.7	0.2
1945	24.1	17.5	6.6	0.4	0.5	0.3
1946	52.6	36.4	16.2	0.4	0.4	0.7
1947	76.7	53.6	23.1	0.5	0.4	0.7
1948			36.8			0.7
1949			56.9			0.9
1950			75.6			1.1

Source: U. S. Department of Commerce, Bureau of Foreign and Domestic Commerce.

Employment and Wages

Average employment in all construction work amounted to 10,500 in 1950 or 10.4 percent of total covered employment. This represented an increase of 4,800 workers or 84.2 percent over 1939. Employment in construction declined at the beginning of World War II in 1941 and then increased in 1942 as the Great Falls air base was constructed. During the next three years, as building was curtailed, employment was low, increasing in 1946 to the prewar level and gaining rapidly each year thereafter. The largest over-all increase between 1939 and 1950 took place in building construction, consisting of contractors engaged in the construction of residential, farm, industrial, and public buildings, and in special trade construction, including subcontractors engaged in plumbing, painting, plastering, and electrical work. These groups more than doubled their number of employees during the period. General contractors engaged in the construction of heavy engineering projects such as highways, bridges, and irrigation and flood-control projects increased their employment by about one-third. This group suffered the greatest decline during the war, dropping from an average employment of 2,800 in 1942 to 1,100 in 1944.

Contract construction is the most seasonal of any group of covered industries in Montana, with weather as the chief determinant. In a typical nonwar year during the past decade, the number of workers engaged in construction work varied by about 4,600 between February, the low month, and August, when employment is at its peak, or from 38.1 percent below to 30.2 percent above the average month. During the war, when employment in the industry was very low, the magnitude of fluctuations amounted to about 1,800 workers. The seasonal pattern was fairly similar, however, except that employment declined in September and rose to a new peak in October. Percentage deviations were only slightly less severe during the war than in nonwar years, indicating that the seasonal index is fairly uniform from year to year, regardless of the level of employment.

Table 32

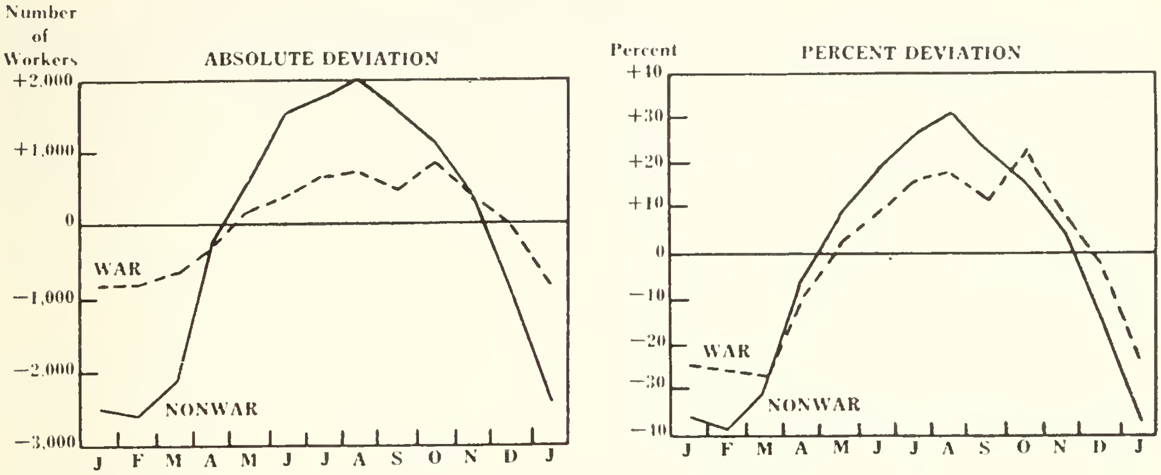
AVERAGE COVERED EMPLOYMENT IN CONTRACT CONSTRUCTION IN MONTANA, 1939-1950

(thousands of workers)

Year	Building Contractors	General Contractors	Special Trade Contractors	Total	% of Total Nonagricultural Employment	% of Total Covered Employment
1939	1.7	2.6	1.4	5.7	5.6	8.3
1940	1.7	2.5	1.4	5.6	5.2	7.6
1941	1.4	2.0	1.3	4.7	4.2	6.1
1942	1.5	2.8	1.0	5.2	4.5	6.6
1943	1.0	1.5	.8	3.3	2.9	4.5
1944	1.0	1.3	.8	3.1	2.7	4.3
1945	1.3	1.3	1.1	3.7	3.3	5.4
1946	2.4	1.6	1.8	5.8	4.6	7.0
1947	2.8	2.3	2.2	7.3	5.4	8.0
1948	3.0	3.5	2.6	9.1	6.3	9.3
1949	3.5	3.5	2.8	9.8	6.7	9.9
1950	4.0	3.6	2.9	10.5	7.1	10.4

Source: Unemployment Compensation Commission of Montana.

Chart 21
TYPICAL SEASONAL VARIATION OF COVERED EMPLOYMENT IN CONTRACT CONSTRUCTION IN MONTANA, NONWAR AND WAR YEARS, 1940-1949



Note: Nonwar years=1940, 1941, and 1946-1949. War years=1942-1945. Zero line represents average employment during each period.
Source: Unemployment Compensation Commission of Montana.

The same observations apply to each type of construction activity. In general, the percentage fluctuations were about the same for the war and postwar years, with the peak later in the year, in October, during the war. General construction is the most seasonal of the three, with special trade construction, much of which consists of inside work, having the least variation.

Wage rates paid in the construction industry are well above the average. In 1950, total wages paid to covered construction workers amounted to 13.1 percent of all covered wages paid, while employment in construction accounted for only 10.4 percent of total covered employ-

Table 33
TOTAL WAGES PAID TO COVERED WORKERS IN CONTRACT CONSTRUCTION IN MONTANA, 1939-1950

(millions of dollars)

Year	Building Contractors	General Contractors	Special Trade Contractors	Total	% of Total Covered Wages
1939	1.9	3.1	1.5	6.5	7.2
1940	1.9	3.2	1.6	6.7	6.6
1941	1.7	2.8	1.6	6.1	5.5
1942	3.5	7.0	1.7	12.2	9.4
1943	2.4	3.4	1.9	7.7	5.6
1944	2.3	3.4	1.7	7.4	5.3
1945	2.8	3.6	2.4	8.8	6.3
1946	5.6	4.1	3.9	13.6	7.9
1947	6.3	6.7	5.5	18.5	8.6
1948	8.3	11.9	7.4	27.6	10.8
1949	10.2	13.8	8.7	32.7	12.1
1950	13.3	15.2	9.6	38.1	13.1

Source: Unemployment Compensation Commission of Montana.

ment. Thus, in spite of the irregularity of employment, wages in the construction industry are of relatively greater significance than is employment. This represents a reversal of the situation from 1939 to 1941, when wage rates were considerably lower and wages paid by the industry tended to be a smaller part of the total than did employment.

Table 34 summarizes the unemployment compensation experience of the construction industry since the fiscal year 1942-1943. During the war years, benefit payments were very low, due to the lack of construction activity. Beginning in 1945-1946, payments increased sharply as postwar construction projects began to get underway, amounting to over 1 percent of taxable wages in that year. During the slump which took place in 1949 and 1950, the ratio of benefits to taxable wages increased to almost 3 percent. The ratio for the eight-year period (1.30 percent) is considerably higher than that of any other covered industry group.

The extreme seasonality of the construction industry has contributed to the high rate of benefits paid. Two federal dam projects, Hungry Horse near Kalispell and Canyon Ferry near Helena, employ a large number of workers in general construction during the summer months. At the peak of the 1950 season in August, almost 2,400 men were employed at Hungry Horse and 450 at Canyon Ferry. Employment during the winter months is much lower; however, as layoffs begin many of the workers move out of the state to places where winter employment is available.

Special trade work is somewhat less seasonal than general and building construction and as a result the ratio of benefits to taxable wages has been lower, amounting to 0.91 percent over the eight-year period since fiscal 1943, compared to 1.43 for building construction and 1.44 for general construction.

Outlook for Construction Activity

The outlook for construction activity and employment is dependent to a high degree upon government regulations as a result of the war emergency. Under present conditions, construction is likely to continue at fairly high levels. If, however, strict controls should be enacted curtailing private residential building and limiting industrial construction

Table 34
RATIO OF BENEFIT PAYMENTS TO TAXABLE WAGES UNDER MONTANA UNEMPLOYMENT COMPENSATION LAW, CONTRACT CONSTRUCTION, FISCAL YEARS, 1943-1950

Fiscal Year	Building Construction	General Construction	Special Trade Construction	Total
1942-43	.28	.12	.30	.20
1943-44	.23	.12	.17	.16
1944-45	.14	.09	.12	.11
1945-46	.85	1.62	.64	1.05
1946-47	.73	1.00	.51	.75
1947-48	1.05	1.24	.61	.99
1948-49	1.60	1.41	.77	1.30
1949-50	3.14	3.43	2.12	2.98
Ratio for 8-year Period	1.43	1.44	.91	1.30

Source: Unemployment Compensation Commission of Montana.

to war essential enterprises or if essential material shortages develop, employment in construction would decline rapidly as it did during World War II.

The Hungry Horse and Canyon Ferry projects will be completed within the next few years and unless other large-scale projects appear in the meantime, the demand for workers in general construction will decline substantially. Many of these workers will probably move on to similar projects in other states; others will have to be absorbed in other jobs in Montana. In any event, the completion of the projects is likely to place a temporary burden upon the unemployment compensation fund.

IX. Manufacturing

Montana is not an industrialized state and manufacturing is less important than in the nation as a whole. In 1947, value added by manufacture in Montana amounted to $92,258,000 or only 0.1 percent of the United States total.[1] Manufacturing payrolls represented only 6.2 percent of income payments to Montana individuals in 1950, whereas in the United States the percentage was 22.6.[2] In the United States, 33.8 percent of all nonagricultural workers were employed in manufacturing industries in 1950 while in Montana only 12.3 percent were in manufacturing.

Table 35

MANUFACTURING IN MONTANA, 1939 and 1947

	1939	1947	% Change, 1939-1947
Number of establishments	552	652	+ 18.1
Production workers (average for year)	8,802	13,606	+ 54.6
Value added by manufacture (thousands of dollars)	38,828	92,258	+137.6

Source: U. S. Department of Commerce, Census of Manufactures.

The major manufacturing industries in the state are engaged in the processing of raw materials from farms, forests, and mines. Individual establishments are small, with only 28 of a total of 652 plants employing over 100 workers. Food and lumber manufacturing and the smelting and refining of nonferrous metals and petroleum employ about four-fifths of all workers in manufacturing.[3] The next largest group is employed by printing and publishing establishments and the remainder is in small, miscellaneous manufacturing industries.

Employment and Wages

Between 1939 and 1950, employment in all manufacturing in Montana increased 52.1 percent, or at a rate slightly higher than either total nonagricultural or total covered employment. All industries within the group increased in number of employees. Only lumbering, however, had a large enough growth to increase in importance relative to total employment. In 1950, it employed 5.3 percent of all covered employees, as opposed to 3.2 percent in 1939.

During World War II, manufacturing employment increased somewhat in relation to the rest of Montana's economy, employing in 1943 and 1944 21.4 and 21.7 percent of all covered workers and 13.8 percent of nonagricultural workers. In the United States, manufacturing employment reached 41.4 and 41.2 percent of nonagricultural employment in 1943 and 1944, as a tremendous expansion in industries producing for war took place. The lack of war industries in Montana during the last conflict is emphasized by U. S. Department of Commerce estimates that

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[1] U. S. Department of Commerce, Census of Manufactures.

[2] U. S. Department of Commerce, National Income Division.

[3] The food products and lumber industries are discussed individually in following pages. The smelting and refining of nonferrous metals and petroleum refining are included in the mining and petroleum industry chapters.

Table 36
VALUE ADDED BY MANUFACTURE, MAJOR INDUSTRY GROUPS, MONTANA, 1939 and 1947

	Value Added (thousands of dollars)		% of Total Value Added	
Industry Group	**1939**	**1947**	**1939**	**1947**
Food and Kindred Products	11,798	26,230	30.4	28.4
Lumber and Products	4,240	22,053	10.9	23.9
Printing and Publishing Industry	3,141	6,062	8.1	6.6
Chemicals and Allied Products	1,163	2,149	3.0	2.3
Petroleum and Coal Products	4,386	7,855	11.3	8.6
Stone, Clay, and Glass Products	1,444	3,607	3.7	3.9
Fabricated Metal Products	288	1,302	.7	1.4
All Other Major Industry Groups[1]	12,368	23,000	31.9	24.9
All Industries, Total	38,828	92,258	100.0	100.0

[1] Includes smelting and refining of nonferrous metals.

Source: U. S. Bureau of the Census, Census of Manufactures.

in 1943 and 1944 war manufacturing payrolls[1] in Montana amounted to only 2.8 and 2.6 percent of total income payments, compared to 19.7 and 18.8 percent of payments in the United States.

Because manufacturing was of less importance in Montana during the war, the state escaped most of the readjustment problems which some areas faced as defense plants were closed. Manufacturing employment in Montana grew to a new high in 1946, while national employment in those industries declined.

Employment in manufacturing in Montana is quite seasonal, largely because of the importance of the food products and lumber industries.[2] Despite the steady employment provided by the smelters and refineries, printing and publishing establishments, and other, less important, enterprises, total manufacturing employment in a typical nonwar year since 1939 has varied by about 3,300 workers from March, the low month, to October, when employment is at its peak, or from 10.3 percent below to 9.1 percent above the average month. During the war, (1942-1945) fluctuations in employment were smaller, ranging from approximately a minus 5.0 percent to a plus 6.4 percent.

Average wage rates paid to covered workers in manufacturing industries are well above the average for all industries, but are lower than those paid to mining and construction workers. Covered manufacturing employees earned $59.4 million in wages in 1950 or 20.4 percent of total covered wages paid in the state. (See Table 38.)

Outlook for Manufacturing

Prospects for increased manufacturing activity in Montana seem brighter than at any time in its history. The completion of Hungry Horse Dam in 1953 will make large quantities of cheap power available to industry and make possible fuller utilization of the state's resources.

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[1] Chemical and allied products, rubber, iron and steel, ordnance and accessories, transportation equipment, nonferrous metals and products, electrical and other machinery, and automobiles and automobile equipment industries.

[2] The lumber industry is classified in federal government employment data as a manufacturing industry. Other classifications frequently include that segment of the industry engaged in logging as a primary industry, along with agriculture and mining.

Table 37

AVERAGE COVERED EMPLOYMENT IN MANUFACTURING IN MONTANA, 1939-1950

(thousands of workers)

Year	Food and Kindred Products	Lumber and Wood Products	Printing and Publishing	Petroleum Refining	Smelting and Refining[1]	Misc. Manu- facturing	Total[2]	% of Total Nonagricultural Employment	% of Total Covered Employment
1939	3.7	2.2	1.4	.7	3.3	.7	11.9	11.7	17.4
1940	3.9	2.9	1.3	.8	3.7	1.2	13.8	12.8	18.7
1941	3.8	3.5	1.4	.7	4.6	1.1	15.1	13.5	19.6
1942	4.1	3.9	1.3	1.0	4.8	1.1	16.0	13.8	20.4
1943	4.2	3.9	1.1	.8	4.6	1.2	15.8	13.8	21.4
1944	4.4	3.9	1.1	.7	4.0	1.6	15.6	13.8	21.7
1945	4.4	3.2	1.1	.7	3.7	1.6	14.6	12.9	20.3
1946	4.6	4.2	1.2	.8	3.9	1.6	16.2	12.9	19.5
1947	4.8	5.7	1.3	.8	4.2	1.8	18.5	13.6	20.1
1948	4.3	5.7	1.4	.7	4.3	1.9	18.3	12.8	18.6
1949	4.3	4.9	1.4	1.0	4.3	2.0	17.8	12.3	18.0
1950	4.3	5.4	1.5	1.0	4.0	1.9	18.1	12.3	17.9

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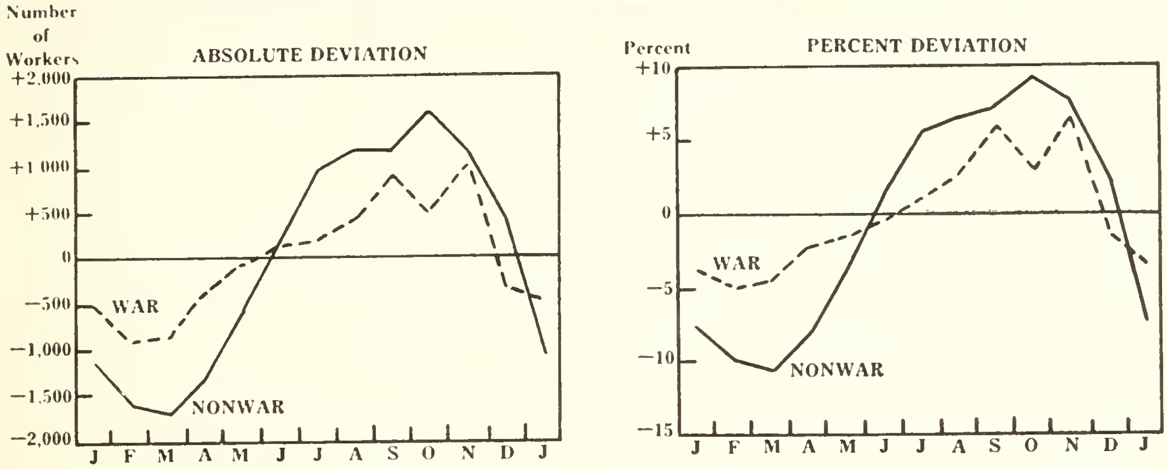
[1] Of nonferrous metals.
[2] Because of rounding, components do not always equal total.

Source: Unemployment Compensation Commission of Montana.

Chart 22
TYPICAL SEASONAL VARIATION
OF COVERED EMPLOYMENT IN MANUFACTURING
IN MONTANA, NONWAR AND WAR YEARS, 1940-1949



Note: Nonwar years=1940, 1941, and 1946-1949. War years=1942-1945. Zero line represents average employment during each period.
Source: Unemployment Compensation Commission of Montana.

The establishment of an elemental phosphorus plant at Silver Bow, Montana, provides an example of the locational pull of Montana's cheap power and mineral deposits. Plans for the construction of a plant for the production of aluminum ingots near Kalispell also emphasize the importance of power in the future industrial development of the state.

New basic industries such as these will not only create new jobs, but will result in the establishment of supply and related industries and in the growth of trade and service functions. This should provide additional employment in other segments of the economy in addition to the effects on population and income.

Because of these and similar possible developments and the present emphasis on the desirability of decentralization of industry, it is reasonable to assume that manufacturing activity in the state may increase during the next decade. This does not mean, however, that manufacturing in Montana will approach the same importance which it holds in many areas or in the United States as a whole. Most of the manufacturing will probably continue to consist of initial processing with the final stages taking place in more populous and industrialized areas.

FOOD AND KINDRED PRODUCTS

The food and kindred products industries make up an important segment of manufacturing in Montana, although with the exception of sugar and flour most of the products are produced in small plants for local consumption. In 1947, value added by manufacturing in food processing plants amounted to $26,230,000 or 28.4 percent of value added by all manufacturing industries. Average covered employment amounted to 23.8 percent of all manufacturing employment and to 4.3 percent of total covered employment in 1950.

Leading food industry from the standpoint of value added and employment is the beet sugar industry. Five factories are located in Montana, at Billings, Chinook, Hardin, Missoula, and Sidney; the plant at

Table 38

TOTAL WAGES PAID TO COVERED WORKERS IN MANUFACTURING IN MONTANA, 1939-1950

(millions of dollars)

Year	Food and Kindred Products	Lumber and Wood Products	Printing and Publishing	Petroleum Refining	Smelting and Refining[1]	Miscellaneous Manufacturing	Total	% of Total Covered Wages
1939	5.1	2.9	2.0	1.2	6.5	0.9	18.6	20.6
1940	5.5	3.8	2.1	1.4	6.8	1.6	21.2	21.0
1941	5.5	5.0	2.1	1.4	8.4	1.9	24.3	22.1
1942	6.2	6.1	2.1	2.1	10.8	2.2	29.5	22.7
1943	8.4	8.2	2.1	2.2	12.4	2.7	36.0	26.4
1944	7.9	7.7	2.3	1.9	11.4	4.0	35.1	25.3
1945	8.7	6.3	2.3	2.0	10.1	4.0	33.4	23.8
1946	10.0	8.7	2.9	2.3	10.4	3.7	38.0	22.0
1947	11.7	13.7	3.3	2.6	12.0	4.9	48.2	22.4
1948	11.8	15.7	4.1	2.7	13.4	5.5	53.2	20.8
1949	11.8	14.7	4.6	3.9	13.8	6.1	54.9	20.4
1950	12.6	17.4	5.0	4.2	13.7	6.4	59.4	20.4

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[1] Of nonferrous metals.

Source: Unemployment Compensation Commission of Montana.

Billings is the second largest producer of beet sugar in the world. In 1947, $8,668,000 or approximately one-third of the total value added by manufacture of food products was attributed to the state's beet sugar plants. Since 1947, production has declined sharply, amounting to 97,000 tons in 1949, compared to 126,000 tons in 1947 and 140,000 tons in 1939. The decline has been largely the result of decreased acreage planted to sugar beets, making it impossible to keep production up to capacity. Markets for Montana sugar extend eastward to the Twin Cities and throughout the Rocky Mountain area.

The state's flour and feed mills, dependent upon the wheat and livestock industries, make up the second ranking food manufacturing activity. Total value added in 1947 was $4,251,000, of which $3,848,000 was derived from the production of flour. Montana hard wheat is preferred for flour because of its high protein content, and several large milling companies have plants in the state. Montana flour is widely marketed throughout the United States.

Other food products industries in the state, most of which are dependent upon local markets, include breweries and soft drink establishments, meat packing plants, dairy processing plants, and several small fruit and vegetable canneries.

Employment and Wages

Average covered employment in the food products industries numbered 3,700 in 1939 and 4,300 in 1948, 1949, and 1950. (See Table 37). The latter figure represents a decline from 1947, when employment reached a peak of 4,800 workers. This decrease has been due partly to the decline in sugar production and to increased mechanization in the sugar factories.

The food products industries are of special significance to unemployment compensation because of the seasonality of two components, beet sugar and fruit and vegetable canning. All other segments provide

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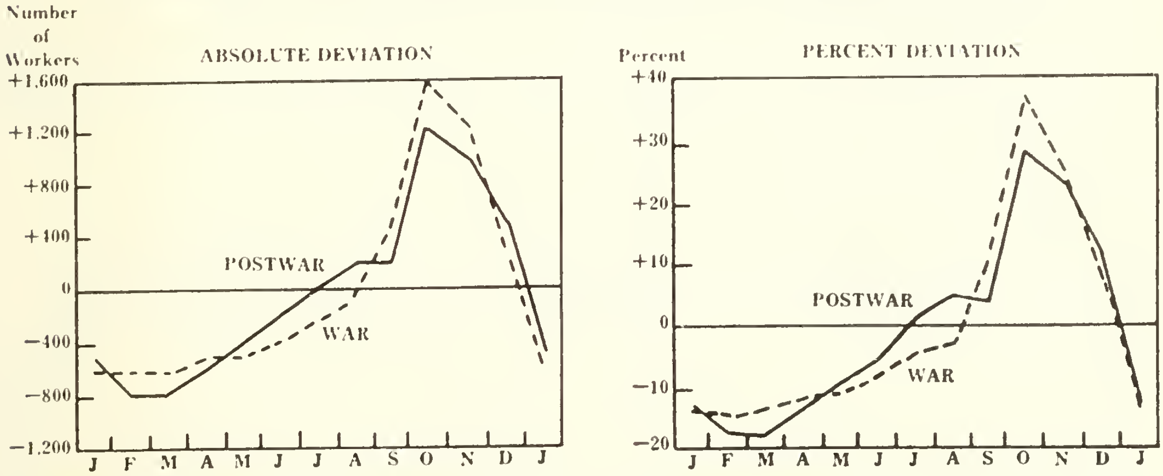
Chart 23

TYPICAL SEASONAL VARIATION
OF COVERED EMPLOYMENT IN FOOD AND KINDRED PRODUCTS
IN MONTANA, WAR AND POSTWAR YEARS, 1944-1949



Note: War years=1944-1945. Nonwar years=1946-1949. Zero line represents average employment during each period.

Source: Unemployment Compensation Commission of Montana.

fairly steady employment. Fluctuations in a typical postwar year (1946-1949) in all food industries amounted to about 2,000 workers; percentagewise, the pattern ranged from 17.1 percent below to 28.2 percent above the average month. Low months in employment are February and March; the monthly average is usually reached for the first time in July as the canneries begin operation. Most of the workers are housewives who come into the plants year after year for the canning season. In October employment reaches its peak as the sugar factories begin hiring workers for the refining season, which lasts for from one to three months.

During the war years the seasonal employment pattern was similar to that of the postwar years, although the peak in October was sharper.

Wage rates paid in the food industries are approximately equal to the average covered wage in Montana. Total wages paid to covered workers in food processing in 1950 amounted to $12.6 million, or 4.3 percent of total covered wages; employment also amounted to 4.3 percent of the total.

With the exception of lumbering, the food and kindred products industries have the highest benefit payment record in the manufacturing group. From 1942-1943 to 1949-1950, benefits paid to unemployed workers amounted to 0.89 percent of taxable wages. In all postwar years except 1946-1947, payments have exceeded 1 percent of taxable wages. This relatively high percentage is due largely to the seasonality of the sugar and fruit and vegetable processing plants.

The Outlook

There is little reason to anticipate a sizeable increase in production or in employment in the food industries during the next decade. While the war emergency continues, Montana's farmers will be called upon to make special efforts to increase the amount of foodstuffs produced, but much of it will be processed elsewhere. Except for sugar factories and flour mills, production in most of Montana's food plants, such as creameries and bakeries, is in response to local demand, which will probably not expand appreciably.

As new irrigation projects are completed, additional acreage will be devoted to sugar beets. This may, however, only serve to offset the decline in acreage which has been taking place and result in little new production or employment in the sugar industry.

While it is doubtful that the level of employment in the food and kindred products industry will be much higher than during World War II, it is also true that little unemployment other than seasonal is to be anticipated in the near future.

Table 39

RATIO OF BENEFIT PAYMENTS TO TAXABLE WAGES UNDER MONTANA UNEMPLOYMENT COMPENSATION LAW, FOOD AND KINDRED PRODUCTS, FISCAL YEARS, 1943-1950

Fiscal Year	Ratio	Fiscal Year	Ratio
1942-43	.16	1946-47	.72
1943-44	.08	1947-48	1.12
1944-45	.11	1948-49	1.32
1945-46	1.14	1949-50	1.82
Ratio for 8-Year Period			.89

Source: Unemployment Compensation Commission of Montana.

LUMBER AND WOOD PRODUCTS

Montana's forests, covering one-fourth of its land area, represent one of the state's greatest assets. In addition to the recreational attraction which the timber areas represent for tourists, during the past decade the forest products industries have become one of the leading manufacturing activities in Montana. In 1947, value added by manufacturing in lumber and lumber product industries amounted to $22,053,000 or 23.9 percent of the value added by all manufacturing industries in the state, compared to only 10.9 percent in 1939. Since 1947, production has greatly increased and value added by manufacturing is no doubt of greater relative importance than in 1947.

Montana ranks second among the eight Mountain states in volume of standing saw timber and fifth in the nation. Three-fourths of the commercial saw timber is located in the mountainous western third of the state. About 65 percent of all saw timber is owned by the federal government, 30 percent is privately owned, and 5 percent is in the hands of the state and local governments. Ninety-nine percent of Montana's timber volume is in softwoods. Chief species are Douglas fir, western larch, ponderosa pine, Engelmann spruce, and lodgepole pine.

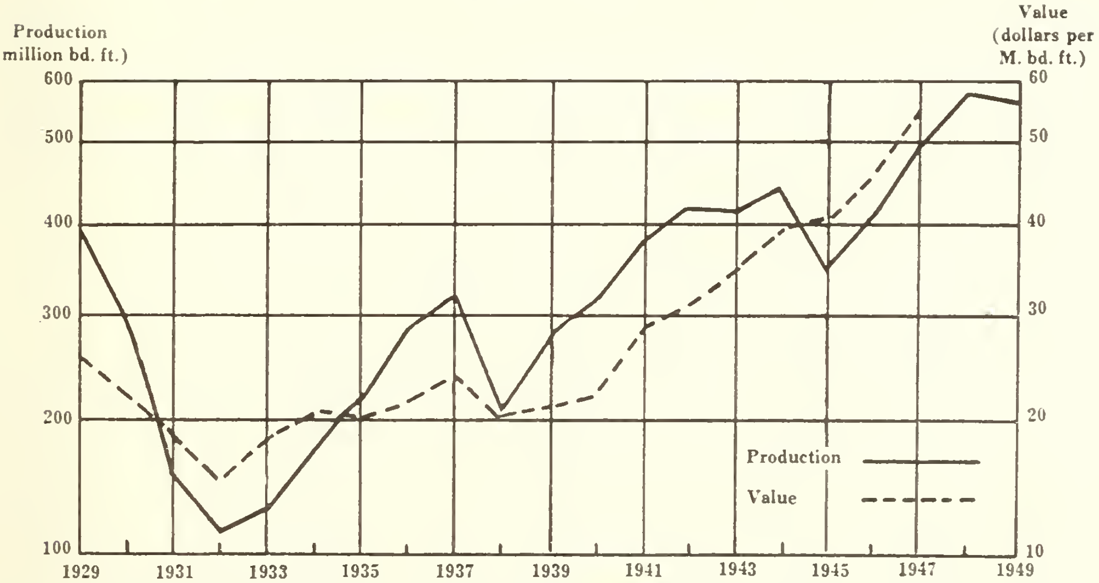
Production

Lumber production in Montana is strongly affected by price, varying since 1929 from a low of 112 million board feet in 1932 to about 598 million in 1948. Between 1939 and 1948, production increased 119.0 percent; between 1939 and 1949, when production declined slightly, the increase was 111.0 percent. The value of the lumber produced has ranged from about $1.5 million in 1932 to over $44 million in 1948. The demand for lumber and higher prices during World War II gave an impetus for

Chart 24

LUMBER PRODUCTION IN MONTANA AND AVERAGE MILL VALUE, 1929-1949

(Ratio Scale)



Note: Average mill value in United States, for all species. Data not available after 1947.

Source: U. S. Department of Agriculture, Forest Service.

added production, and despite difficulties owing to shortages of equipment and manpower, high output was maintained through those years. With the end of the war, production declined in 1945, to increase again in 1946 as the postwar construction boom began. The peak was reached in 1948, and production in 1949 is estimated to have declined somewhat, although it was considerably above any other year, with about 576 million board feet.

Three species, ponderosa pine, Douglas fir, and western larch, account for almost the entire output. In the past, ponderosa pine and larch have been the chief species of lumber produced. In recent years, however, the production of Douglas fir has greatly increased, ranking second to ponderosa pine in 1948. Approximately one-half the lumber produced in Montana is consumed within the state. The bulk of the consumption consists of Douglas fir and western larch, which are well suited for rough construction, mine timbers, and railroad ties. Ponderosa pine, however, is used extensively in the manufacture of secondary wood products and much of the Montana production is exported to the Midwest. These states have always been the largest outside consumers of Montana's lumber products. Latest distribution figures available are for 1945, when over half the lumber produced in Montana was consumed within the state; 33 percent went to the Middle West; and numerous other states, mostly in the West and Northeast, took the remainder.

The number of active sawmills in Montana has more than tripled be-

Table 40

LUMBER PRODUCTION IN MONTANA, 1929-1949

Year	Production (M feet Board Measure)	Value (Thousands of Dollars)
1929	388,711	8,826
1930	293,335	6,414
1931	159,491	2,690
1932	112,187	1,549
1933	126,578	2,112
1934	173,324	3,237
1935	235,288	4,447
1936	296,866	5,908
1937	336,497	7,810
1938	223,259	4,612
1939	273,013	5,903
1940	327,196	7,169
1941	373,970	9,244
1942	433,089	11,706
1943	423,520	12,696
1944	448,498	14,297
1945	341,749	12,194
1946	415,421	17,204
1947	499,959	30,660
1948	597,944	44,477
1949[1]	576,000	41,000

[1] Estimated.

Source: U. S. Department of Agriculture, Forest Service.

tween 1931 and 1948. The increase has come in the number of small and medium-sized mills cutting less than 10 million board feet per year. In 1931, 134 such mills were operating in the state; in 1948 there were 429, of which 342 cut less than one million board feet each. World War II and the years immediately following created a market for rough unfinished lumber and provided opportunities for these small mills. Nearly all operate in conjunction with their own logging camps. Although they are adapted to better methods of logging than have been practiced by some of the large mills, their utilization at the mill is wasteful and the majority are not equipped to do a very good job of lumber manufacturing. Most produce only rough unseasoned (green) lumber, a considerable amount of which they sell to planing mills equipped with dry kilns. They are highly responsive to market conditions, operating when the market will take their product and closing when prices for lumber are low. This characteristic, of course, creates added unemployment problems.

The number of large mills, cutting over 10 million board feet per mill per year, has varied from three to five since 1931. At present, four mills, all located in western Montana—at Bonner, Columbia Falls, Kalispell, and Libby—are producing at the rate of 10 million feet or more per year. Changing market conditions are apt to affect the larger mills less severely than the smaller ones because of their ability to provide a wider range of products of a more finished nature.

The increasing importance of smaller mill units in Montana's lumber industry during the past twenty years is further emphasized by comparing changes in the percentage of total production by the two size groups. In 1926, seven large mills produced 75.6 percent of the total output; in 1948, the five large mills operating in the state produced only 34.9 percent. At the same time, those mills producing between 1 million and 9,999,999 board feet each increased their output from 13.5 to 47.9 percent, and mills producing less than 1 million feet from 8.6 to 17.2 percent of the total.

If the demand and price for lumber remain high, it is probable that the smaller units in the state's lumber industry will maintain or increase their relative importance. These mills, if efficiently managed, can operate on small tracts of timber or on cut-over land much more economically than can a large mill with an investment several times that of its smaller competitors. If a large mill cuts itself out of timber, it may have to cease operation, while a small portable mill can move on to another supply.

Also, it has become increasingly difficult to block out a timber holding in the state large enough to justify the investment necessary for the establishment of a big plant. These and other factors seem to indicate that the large mills in the state are not likely to increase in number. However, if the price for lumber should fall to a level at which the small mills could not operate profitably, the bulk of the remaining production would again come from the larger, more stable mills.

Other products of Montana's forests include pulpwood logs and bolts for shipment to pulp mills in the Middle West, poles and piling posts, sawed cross ties, mine timbers, shingles, lath, fuelwood, and Christmas trees; all of these are of only minor importance, however, in comparison with the production of lumber.

Table 41

LUMBER PRODUCTION IN MONTANA BY SIZE OF SAWMILL, 1921-1948

			— Large Mills[1] —			— Medium Mills[2] —			— Small Mills[3] —		
Year	Total Production (M feet— bd. meas.)	Total No. of Mills	No. of Mills	Production (M feet— bd. meas.)	% of Total	No. of Mills	Production (M feet— bd. meas.)	% of Total	No. of Mills	Production (M feet— bd. meas.)	% of Total
1921	214,908	159	7	160,878	74.9	12	32,843	15.3	140	21,187	9.9
1926	379,563	161	7	286,934	75.6	19	71,181	18.8	135	21,448	5.6
1931	159,491	139	5	124,288	77.9	7	21,540	13.5	127	13,663	8.6
1936	296,866	198	5	188,176	63.4	17	84,346	28.4	176	24,344	8.2
1941	373,970	265	4	242,375	64.8	28	90,379	24.2	233	41,216	11.0
1945	341,749	253	4	162,767	47.6	49	145,326	42.5	200	33,656	9.8
1946	413,859	401	3	158,725	38.4	67	192,905	46.6	331	62,229	15.0
1947	499,959	407	4	202,063	40.4	77	226,953	45.4	326	70,943	14.2
1948	597,944	434	5	208,930	34.9	87	286,386	47.9	342	102,628	17.2

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[1] Mills cutting 10,000,000 feet, board measure, and over.
[2] Mills cutting 1,000,000 to 9,999,999 feet, board measure.
[3] Mills cutting 999,999 feet, board measure, and less.

Source: U. S. Department of Agriculture, Forest Service.

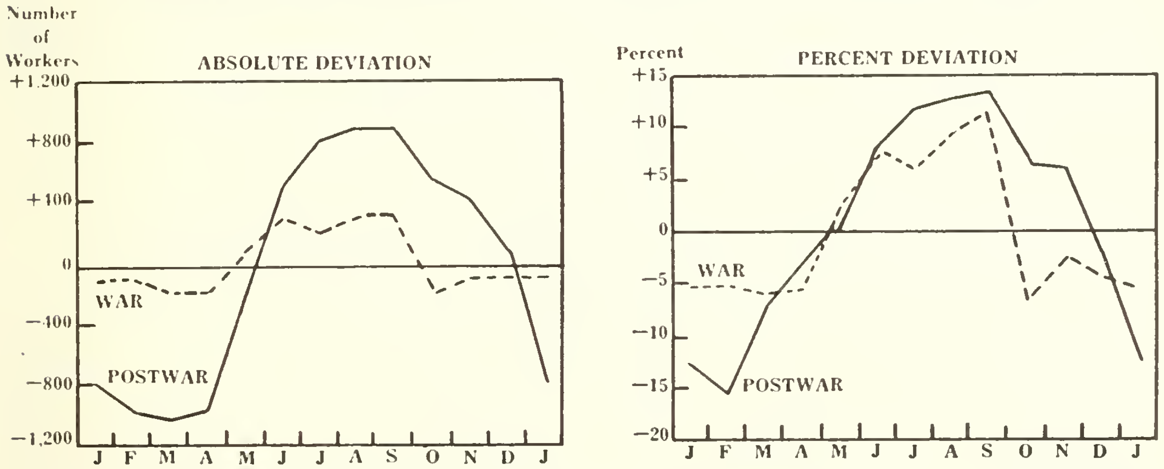
Available statistics indicate that Montana leads all other states in the marketing of Christmas trees and supplies about one-seventh of all trees cut in the United States. The industry in 1948 and 1949 brought over $1 million each year into the state and has become a rather important means of supplementing the income of farmers in western Montana, where per farm incomes are generally lower than in other parts of the state.

Employment and Wages

Covered employment in all lumber and lumber products industries in Montana has doubled since 1939 and since 1946 has accounted for from 5.0 to 6.2 percent of total covered employment. The industry is the largest employer in the manufacturing group, with 25.9 to 31.1 percent of manufacturing employment during the postwar years. In 1947 and 1948, average covered employment in lumbering amounted to 5,700. In 1949 it fell to 4,900 but increased in 1950 to 5,400, or 5.3 percent of total covered employment. (See Table 37.) Many others working on a contract basis and not included in covered employment are also attached to the industry.

Lumber is one of the most seasonal industries in the state. Employment varied typically by about 2,000 workers from March to August and September in the postwar years, 1946-1949, or from 15.6 percent below to 13.9 percent above the average month. Logging operations are handicapped by winter snows, when the worker cannot get about in the forests, and by the thawing of ice and snow and rains which make roads in the timber area impassable in the spring. Employment in the smaller mills is especially seasonal. Most of these mills cease operation entirely during the winter and spring when logging operations cease, while the larger mills accumulate a supply of logs in the fall and operate fairly steadily throughout the year. During the average year, from December through April employment in lumbering is below the monthly average; in April it begins to rise, reaching its peak in August.

Chart 25
TYPICAL SEASONAL VARIATION OF COVERED EMPLOYMENT IN LUMBER AND WOOD PRODUCTS IN MONTANA, WAR AND POSTWAR YEARS, 1944-1949



Note: War years=1944-1945. Postwar years=1946-1949. Zero line represents average employment during each period.

Source: Unemployment Compensation Commission of Montana.

During the war years, 1944-1945, employment in lumber manufacturing was much less seasonal, with an average variation of only 500 workers. The pattern differed from that of the postwar years, with two low points, in March and October and two highs, in June and September. Operators made a special effort during the war to maintain production for the war effort. Logging roads were kept open and loggers worked in the forests, at an increased operating cost, in order to insure a supply of logs for the sawmills. Fortunately, winter weather was less severe during those years, making year-round operation more feasible.

Because of the concentration of the lumber industry in western Montana, the seasonality of employment creates serious problems in certain areas, particularly in Flathead, Lake, Sanders, and Lincoln counties, where lumber workers make up a large part of total employment. Unemployment is severe and benefit payments are heavy in these areas during the winter months.[1]

Harvesting and shipping of Christmas trees provides employment during about two months in the late fall for approximately 1,000 workers. Much of this is supplemental to the regular employment routine of the persons engaged. The greatest activity in the industry occurs at a time when operations in agriculture, construction, railroad maintenance, and to some extent logging, are approaching their seasonal layoff periods.

There is much shifting of workers between lumber and agriculture and other seasonal activities carried on in rural areas. Many combine the operation of small farms with work in forest industries. Some workers move within the industry, transferring from one place of employment to another. This is particularly true of independent contractors in logging.

Wages paid to lumber workers are higher than the average wage paid to all covered employees but are somewhat lower than the average earned by all manufacturing workers. In 1950, covered employees in lumber manufacturing earned $17.4 million or 6.0 percent of all wages paid to covered workers in Montana. (See Table 38.)

Because of its seasonality, employees in the lumber industry draw rather heavily on unemployment insurance. During the fiscal years from 1942-1943 to 1949-1950, benefit payments amounted to 1.69 percent of taxable wages, highest ratio of any covered industry. Since the beginning of the unemployment program, benefits paid to lumber workers have exceeded contributions of employers in four different years.

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[1] It should be noted that the establishment of an aluminum plant near Kalispell should be of some importance in alleviating the seasonal problem in that area.

Table 42
RATIO OF BENEFIT PAYMENTS TO TAXABLE WAGES UNDER MONTANA UNEMPLOYMENT COMPENSATION LAW, LUMBER AND WOOD PRODUCTS, FISCAL YEARS, 1943-1950

Fiscal Year	Ratio	Fiscal Year	Ratio
1942-43	.15	1946-47	.64
1943-44	.07	1947-48	1.22
1944-45	.11	1948-49	2.67
1945-46	1.52	1949-50	4.72
Ratio for 8-year Period			1.69

Source: Unemployment Compensation Commission of Montana.

Because of the effort made by the industry to operate on a year-round basis during World War II, payments were very low during those years. During the slump in 1949-1950 benefits paid reached an all-time high and amounted to 4.72 percent of taxable wages.

Outlook for Lumber and Wood Products

Despite the vastness of its resources, Montana is not a leading producer of lumber, ranking eighteenth in the nation in 1947. The lack of large markets and construction centers within economical shipping distance prevents full utilization of these resources. New roads to make more timber accessible to loggers are needed, as well as investment capital and research in wood products and processing.

Production of lumber during the next few years will be at least partly dependent upon defense requirements. As yet, however, construction has not been severely curtailed and as long as the nation is engaged in a limited war, it seems likely that private construction may continue to use a large percentage of total lumber output. If an all-out war develops, the situation is likely to be reversed. Forest Service officials do not anticipate much increase in production, although sufficient timber is available. A reduction in the amount produced is possible, if producers should be faced with a shortage of manpower, with workers going into the armed services or taking advantage of non-seasonal work in defense industries.

Lack of nearby markets is generally given as the chief factor against the establishment of finished product forest industries in Montana. During the past ten years, however, the great population growth in the West has at least created potential markets for products which might be produced in Montana, if it could compete with the Pacific Coast states. With its great forest resources, it is to be expected that in the future some manufacturing plants based upon them may be established in the state. Ponderosa pine saw timber in Montana is being cut faster than it is being grown; the cut of white pine, larch and Douglas fir saw timber is currently as high as it is desirable to have it go. With these exceptions, however, there is opportunity for expanding production. The desirable cut of all other species and kinds of timber is substantially above current levels. The establishment of additional lumber manufacturing activities would prove beneficial not only from the standpoint of added employment and income, but because of the stability which a diversification of products would add to the industry.

Among the possibilities most frequently mentioned for Montana are pulp mills and veneer and plywood plants. Many present producers of these products in other areas are faced with difficulties in procuring their raw materials. There is no question but that ample resources for such undertakings exist in Montana. Numerous other factors require consideration, however, among them the accessibility of the timber and cost of logging, distance from large markets and cost of transportation, competition from other areas, particularly the West Coast and the South, and the large capital investment requirement and water pollution problem in the case of a pulp mill. At the same time, there is considerable justification for the belief that the next decade may see the establishment of new forest products industries which will provide new employment opportunities.

Because seasonality in the lumber industry is a result of weather conditions, there is little reason to anticipate any change in the seasonal pattern during the next ten years, unless defense requirements increase to the point where operators will again exert maximum efforts to keep production on a year-round basis, as during World War II. In this event, seasonality might be expected to decline. The development of new finished product industries would provide more non-seasonal work, but at the same time would create additional seasonal jobs in logging. Thus it is likely that the forest industries will continue to present a problem from the standpoint of unemployment.

X. The Trade and Service Industries

Typically, in areas where no heavy industrialization exists, the provision of consumers' goods and services assumes the leading role as a source of nonagricultural employment. This is true in Montana, where the trade and service industries employ about one-half of all covered workers and over one-third of all nonagricultural workers. Trade and service income has amounted to from 21.2 to 24.9 percent of total income in Montana since 1929; it increased 200 percent between that year and 1950. Of total trade and service income, about three-fourths comes from the trade industries.

TRADE

Both retail and wholesale trade are highly dependent upon the general levels of income and employment. Between 1939 and 1948, the trend in employment was upward and total income in the state increased each year. As a result, the general and department store sales index moved steadily upward during the 10-year period, particularly as more goods became available during the postwar years. (See Chart 5.) The trade industries quickly felt the effect of lower employment and income during the recession of 1949 and 1950 and recovered only after the outbreak of hostilities in Korea in June 1950. During the remainder of 1950 and the first nine months of 1951, the monthly index continued to set new records, as a result of rising prices as well as increased volume.

Between 1939 and 1948, according to the Census of Business, sales receipts of all retail establishments grew from $222,008,000 to $602,623,000 or 171.4 percent, and wholesale sales receipts from $130,584,000 to $604,244,000 or 362.7 percent. These percentages do not allow for the increase in price levels during that period.

Three cities, Great Falls, Billings, and Butte, have established themselves as the leading trade centers in Montana. Together, they accounted for 27.5 percent of all retail trade and 44.4 percent of all wholesale trade in the state in 1948. Between 1939 and 1948, Billings displaced Butte as the chief wholesaling center, with a volume approximately equal to that of Butte and Great Falls combined. In retail trade, both Billings and Great Falls have surpassed Butte since 1939. The declining importance of Butte as a trade center reflects in part the influence of a decrease in mining activity and employment upon that city.

Retail sales, of course, are less concentrated than wholesale, with many small towns in Montana serving as retail centers for considerable areas. In northern Montana cities, the volume of retail trade derived from Canadian visitors is significant. Most of the wholesale business in the state is conducted within local trade areas, except that the Billings

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Table 43

RETAIL AND WHOLESALE TRADE IN MONTANA, 1939 and 1948

	Sales (thousands of dollars) 1939	Sales (thousands of dollars) 1948	Percent Change, 1939 to 1948
Retail Trade	222,008	602,623	+171.4
Wholesale Trade	130,584	604,244	+362.7

Source: U. S. Department of Commerce, Census of Business.

Table 44

AVERAGE COVERED EMPLOYMENT IN WHOLESALE AND RETAIL TRADE IN MONTANA, 1939-1950

(thousands of workers)

Year	Wholesale Establishments	Retail Establishments	Eating and Drinking Places	Filling Stations	Total[1]	% of Total Nonagricultural Employment	% of Total Covered Employment
1939	6.6	12.7	4.3	1.5	25.2	24.8	36.8
1940	8.9	12.9	4.5	1.6	25.9	24.1	35.1
1941	7.0	13.4	4.4	1.7	26.5	23.6	34.4
1942	6.8	12.3	4.5	1.5	25.1	21.7	32.0
1943	7.1	12.8	3.7	.6	24.2	21.1	32.7
1944	6.6	12.4	5.5	.5	25.0	22.1	34.7
1945	7.1	12.7	6.3	.6	26.7	23.6	37.1
1946	8.1	15.4	7.6	.8	31.9	25.3	38.3
1947	8.7	16.5	7.7	1.0	33.8	25.0	36.7
1948	9.7	17.8	8.0	1.1	36.5	25.8	37.1
1949	10.1	17.7	7.7	1.1	36.6	25.4	37.0
1950	9.7	18.3	7.4	1.2	36.6	24.8	36.2

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[1] Because of rounding, components do not always equal total.

Source: Unemployment Compensation Commission of Montana.

market extends into several Wyoming counties. Wholesale trade has increased in importance in the state, however, and retailers are probably less dependent upon outside wholesale sources than in 1939. Not only have sales increased tremendously since that year, but the number of wholesale establishments in the state increased 4.7 percent between 1939 and 1948, in contrast to a 4.4 percent decline in the number of retail stores.

Employment and Wages

Between 1939 and 1950, employment in trade ranged from a low of 24,200 in 1943 to a high of 36,600 in 1949 and 1950, or from 21.1 to 25.8 percent of total nonagricultural employment and from 32.0 to 38.3 percent of covered employment. (See Table 44.) These percentages are larger than for the United States as a whole, where trade accounted for from 17.1 to 21.9 percent of nonagricultural employment and from 19.2 to 25.2 percent of covered employment between 1939 and 1950.

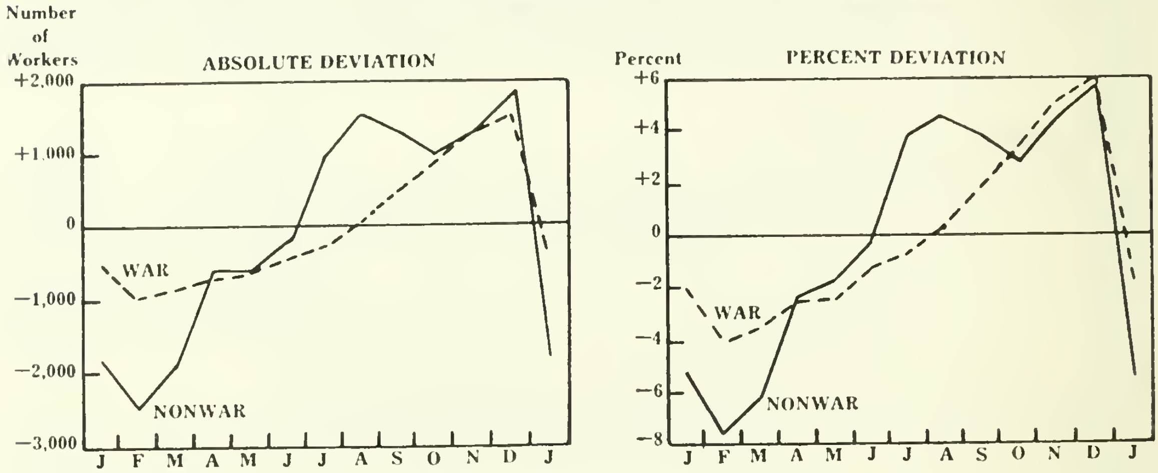
Trade employment declined in actual numbers (2,300) and in relative importance during the war, as a result of shortages both of goods and of manpower. The decline was sharper in Montana than in the United States and was greater for retail than for wholesale trade. However, by 1945 both retail and wholesale trade had recovered to their prewar levels in Montana. Wholesale trade employment has since increased its relative importance in Montana over 1939, while retail trade has just held its own. In 1950, employment in wholesale trade averaged 9,700 and in retail 26,900, including 8,600 in filling stations and eating and drinking places.

The decline in sales of the trade industries which took place in late 1949 and early 1950 noticeably affected employment. In July 1949, retail trade employment fell below the figure for the same month in 1948 and did not again reach the 1948 level until March 1950. By September 1949, the slump in retail trade was reflected by a similar decline in employment in wholesale trade, which continued through 1950.

There is considerable seasonal variation in employment in the trade industries. Although the percentage fluctuation is smaller than in some of the other industry groups, the concentration of covered employment in trade makes it of greater significance. In a typical nonwar year since 1939, covered employment has fluctuated by about 4,300 workers from the low to the high month, or from 7.7 percent below to 5.8 percent above the average month. The low point is reached in February, after which the pattern is steadily upward until December, with the exception of a slight slump in September and October when tourist trade is declining and the effect of the Christmas sales is not yet evident. Three distinct peaks are reached, the first in April or May around Easter; the second in August at the peak of the tourist season; and the highest, of course, in December to accommodate the Christmas trade. Between December and January, employment falls off by about 3,600 workers, with an additional drop of 700 by February. This represents a potential heavy load of claimants for the unemployment compensation program. Many of the workers during the Christmas season, however, are only temporary members of the labor force.

During the war years (1942-1945) there were less consumer goods available and fewer workers in the trade industries. As a result, seasonal fluctuations had much less amplitude than in pre- and postwar years,

Chart 26
TYPICAL SEASONAL VARIATION
OF COVERED EMPLOYMENT IN WHOLESALE AND RETAIL TRADE
IN MONTANA, NONWAR AND WAR YEARS, 1940-1949



Note: Nonwar years=1940, 1941, and 1946-1949. War years=1942-1945. Zero line represents average employment during each period.
Source: Unemployment Compensation Commission of Montana.

with a variance from high to low of only 2,500 workers. The seasonal pattern was one of steady increase from February to December with the nonwar peaks in April and August eliminated.

Wholesale and retail trade employment follow much the same seasonal patterns, except that seasonal upswings in retail trade are anticipated by wholesalers with the result that increases in wholesale employment precede by a month or more those in retail employment. Employment in wholesale trade is smaller than for retail and thus the amplitude of seasonal fluctuations is less, amounting to about 1,500 workers compared to 2,500.

Filling stations and eating and drinking places, classified separately from retail trade, follow quite a different seasonal pattern than the other segments of the trade industry. Seasonal patterns for the two groups are almost identical, except that fluctuations in employment in eating and drinking places have a greater magnitude. Both are strongly influenced by the tourist trade and the summer months represent the period of highest employment, with the peak in August. Employment in eating and drinking places has fluctuated by about 1,600 workers from February (the low month) to August during postwar years; in filling stations, where employment is very small, the difference has amounted to approximately 250. During the war, seasonal fluctuations in the two groups were much smaller, due to the curtailment of travel.

Total wages paid to workers in wholesale and retail trade more than tripled between 1939 and 1950. With 36.2 percent of all covered workers in 1950, its payroll amounted to $95.4 million or only 32.7 percent of total covered wage payments.

Benefit payments to workers in the trade industries amounted to 0.63 percent of taxable wages between 1942-1943 and 1949-1950. Although eating and drinking places account for only a small part of total employment in trade, they have tended to raise the ratio of benefits to taxable wages, with a record for the eight-year period of 1.50 percent of taxable

Table 45

TOTAL WAGES PAID TO COVERED WORKERS IN WHOLESALE AND RETAIL TRADE IN MONTANA, 1939-1950

(millions of dollars)

Year	Wholesale Establishments	Retail Establishments	Eating and Drinking Places	Filling Stations	Total	% of Total Covered Wages
1939	9.7	14.4	3.9	1.5	29.5	32.7
1940	10.3	15.0	4.1	1.6	31.0	30.7
1941	10.9	16.1	3.8	1.8	32.6	29.6
1942	11.2	15.3	4.2	1.7	32.4	24.9
1943	12.1	15.2	4.3	.7	32.3	23.6
1944	12.8	17.3	7.0	.7	37.8	27.3
1945	15.4	19.6	8.3	.9	44.2	31.4
1946	19.7	26.6	11.2	1.4	58.9	34.0
1947	23.8	34.1	12.2	1.8	71.9	33.5
1948	29.5	40.6	13.6	2.2	85.9	33.6
1949	31.1	43.1	14.1	2.4	90.7	33.7
1950	31.4	47.4	14.0	2.7	95.4	32.7

Source: Unemployment Compensation Commission of Montana.

Table 46

RATIO OF BENEFIT PAYMENTS TO TAXABLE WAGES UNDER MONTANA UNEMPLOYMENT COMPENSATION LAW, WHOLESALE AND RETAIL TRADE, FISCAL YEARS, 1943 - 1950

Fiscal Year	Wholesale Trade	Retail Trade[1]	Eating & Drinking Places	Filling Stations	Total
1942-43	.22	.17	.44	.11	.22
1943-44	.06	.05	.12	.01	.06
1944-45	.04	.04	.08	—[2]	.05
1945-46	.42	.35	.71	.38	.46
1946-47	.38	.40	1.38	.35	.58
1947-48	.36	.39	1.53	.33	.59
1948-49	.29	.54	1.85	.36	.68
1949-50	.81	1.13	3.42	.92	1.42
Ratio for 8-Year Period	.37	.48	1.50	.40	.63

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[1] Except eating and drinking places and filling stations.
[2] Less than .01 percent.

Source: Unemployment Compensation Commission of Montana.

wages paid as benefits, compared to 0.48 for retail stores, 0.37 for wholesale outlets, and 0.40 for filling stations. Payments for all groups rose sharply in 1949-1950, with a ratio of 1.42 percent of taxable wages. Here again, eating and drinking places had the highest ratio, 3.42 percent.

Outlook for the Trade Industries

The level of employment in the trade industries during the next ten years depends largely upon the duration and extent of the present national emergency. Under present conditions, no serious decline in consumer expenditures appears likely. If, however, consumer goods become scarce or if higher taxes and effective credit controls should reduce consumer expenditures, employment in wholesale and retail outlets will decline. Under similar conditions in World War II, employment in trade in Montana declined by 2,300 or 8.7 percent from the prewar high. While such a reduction might result in a temporary increase in claims on the unemployment compensation fund, it is well to note that during World War II unemployment insurance claims in the trade industries were very low, both as a result of the ease with which other jobs could be obtained and of the reduction in seasonal fluctuations.

If such an emergency should prove to be of several years' duration, it would probably be followed by an increase in trade employment similar to that in 1946 and subsequent years as consumer goods became more abundant; that is, provided that income and employment in other segments of the economy remained high. If, on the other hand, the national economy should experience a slump during the reconversion to a peacetime economy which was reflected in Montana, employment in the state's trade industries might remain at a depressed level or decline even further.

SERVICES

Although of considerably less significance than trade in terms of income and employment, the service industries have expanded rapidly since 1939. While the number of service establishments covered by the Census declined 13.5 percent, sales and receipts increased 149.6 percent[1] between the 1939 and 1948 Censuses of Business.

Employment and Wages

Estimated total employment in the service industries averaged 18,800[2] in 1950, of which about 13,500 were covered workers. They have accounted for between 11.0 and 12.8 percent of nonagricultural employment during the postwar years, compared to about 11 percent in the United States. Prior to the war, they employed from 10.2 to 11.0 percent of all covered workers and since the war, between 12.9 and 13.7 percent. Between 1939 and 1950, covered service employment increased by 6,000 workers, or 80 percent. The growth was fairly steady, with only one decline, in 1943, and with a rapid increase after the war, as higher incomes resulted in increased demand for services performed outside the home.

Largest in terms of employment among the covered service industries are the professional and social service groups, including medical, legal and engineering organizations, with 3,600 employees. Hotels and rooming houses employ the second largest number, with 3,000 employees in 1950. Employment in this field stayed fairly constant between 1939 and 1945, falling to its lowest point in 1943 as travel was greatly curtailed by the war. Beginning in 1946, as tourist travel resumed and reached high proportions, the number of employees in hotels, auto courts, and other lodging places expanded about 50 percent.

Other service industries, including personal and business, auto and miscellaneous repair services, and motion pictures and amusements, have increased their numbers of employed by about one-half since 1939.

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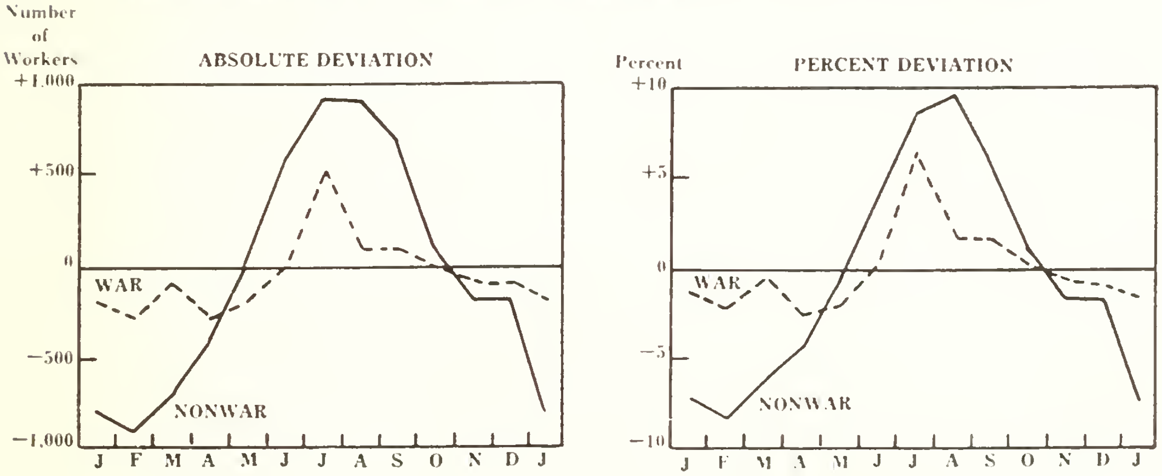
[1] Unadjusted for price increases.
[2] Includes some miscellaneous workers, not elsewhere classified.

Chart 27
TYPICAL SEASONAL VARIATION OF COVERED EMPLOYMENT IN THE SERVICE INDUSTRIES IN MONTANA, NONWAR AND WAR YEARS, 1940-1949



Note: Nonwar years=1940, 1941, and 1946-1949. War years=1942-1945. Zero line represents average employment during each period.
Source: Unemployment Compensation Commission of Montana.

Table 47

AVERAGE EMPLOYMENT IN THE SERVICE INDUSTRIES IN MONTANA, 1939-1950

(thousands of workers)

			Covered Employment						
Year	Total Service Employment[1]	% of Total Nonagricultural Employment	Hotels and Rooming Houses	Personal Services	Business and Repair Services	Motion Pictures and Amusements	Professional and Social Services	Total	% of Total Covered Employment
1939	10.5	10.3	1.9	1.7	.8	1.2	1.9	7.5	11.0
1940	10.1	9.4	2.0	1.7	.8	1.3	1.8	7.6	10.3
1941	10.7	9.5	2.0	1.8	.8	1.2	2.1	7.9	10.2
1942	11.2	9.7	1.9	1.8	.8	1.4	2.3	8.2	10.4
1943	11.0	9.6	1.7	1.7	1.3	1.3	1.9	7.9	10.7
1944	11.3	10.0	1.9	2.0	1.3	1.3	2.0	8.4	11.7
1945	11.9	10.5	2.0	2.1	1.7	1.3	2.2	9.1	12.7
1946	13.8	11.0	2.5	2.4	1.9	1.5	2.4	10.7	12.9
1947	16.8	12.3	2.8	2.5	2.3	1.7	2.9	12.1	13.2
1948	17.4	12.1	2.9	2.5	2.5	1.9	3.2	13.0	13.2
1949	18.4	12.7	3.0	2.4	2.5	2.2	3.3	13.5	13.7
1950	18.8	12.8	3.0	2.3	2.4	2.2	3.6	13.5	13.3

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[1] Excludes domestic workers; includes small number of miscellaneous workers not elsewhere classified.

Source: Unemployment Compensation Commission of Montana.

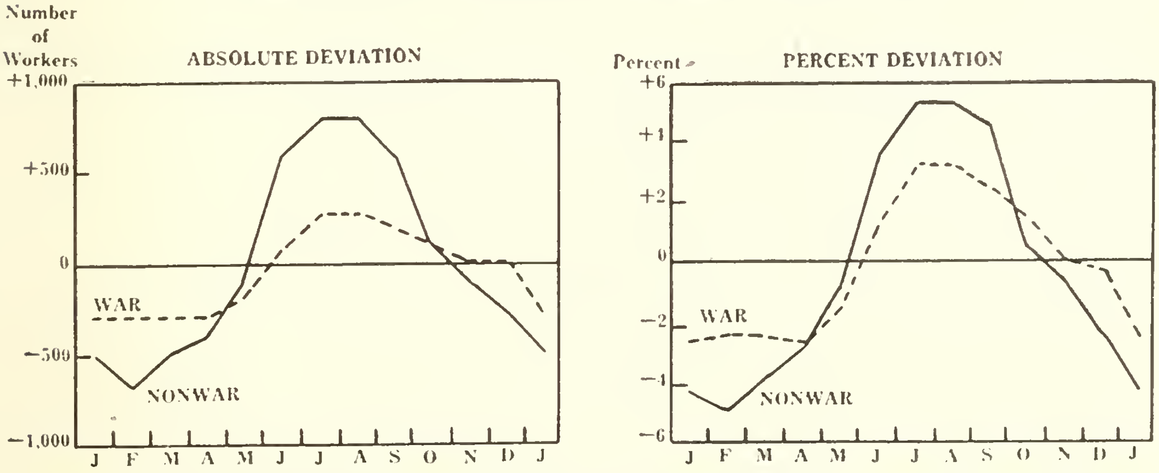
The seasonal pattern of the service industries is due almost entirely to the inclusion of hotels, auto courts, and other lodging places in this group. Because these businesses are highly dependent upon tourist trade, the low point is reached in January and February and the high in July and August. From 1939 to 1949, covered employment varied by about 1,800 workers in a typical nonwar year between these months, or from 8.3 percent below to 9.6 percent above the average month. The other groups classified as service industries provide steady employment throughout the year with very little variation from month to month. The seasonality of service employment was greatly reduced during the war years (1942-1945) because of the curtailment of travel and its effect upon hotels and lodging places. The amplitude of seasonal fluctuations was reduced to about 800 during those years. (See Chart 27.)

Total service employment (excluding domestic workers) follows much the same seasonal pattern as do the covered service industries, although the fluctuations are smaller, amounting to about 1,500 workers in a typical nonwar year since 1939, and varying from 4.9 percent below to 5.3 percent above the average month. During the war, fluctuations in total service employment were reduced to approximately 600 workers. (See Chart 28.)

The service industries have the lowest average weekly wage rates of any covered industry. This is partly due to the fact that many service employees frequently work less than a full work week. Total wages paid to covered workers in service industries amounted to $27.2 million in 1950, an increase of 300 percent over 1939. However, this represented only 9.3 percent of total covered wages in 1950 while covered service employment accounted for 13.3 percent of the total. Thus the service industries are of less significance in terms of wages than of employment.

Hotels and rooming houses had the highest ratio of benefit payments to taxable wages between 1942-1943 and 1949-1950 (1.44 percent), followed by personal services (0.84 percent), and motion pictures and amusements (0.69 percent). Payments to employees of professional and

Chart 28
TYPICAL SEASONAL VARIATION
OF EMPLOYMENT IN THE SERVICE INDUSTRIES IN MONTANA,
NONWAR AND WAR YEARS, 1940-1949



Note: Nonwar years=1940, 1941, and 1946-1949. War years=1942-1945. Zero line represents average employment during each period.
Source: Unemployment Compensation Commission of Montana.

Table 48

TOTAL WAGES PAID TO COVERED WORKERS IN THE SERVICE INDUSTRIES IN MONTANA, 1939-1950

(millions of dollars)

Year	Hotels and Rooming Houses	Personal Services	Business and Repair Services	Motion Pictures and Amusements	Professional and Social Services	Total	% of Total Covered Wages
1939	1.5	1.7	0.9	1.0	1.7	6.8	7.5
1940	1.6	1.7	1.0	1.1	1.8	7.2	7.1
1941	1.6	1.8	1.0	1.0	1.9	7.3	6.6
1942	1.6	1.9	1.1	1.1	2.7	8.4	6.5
1943	1.7	2.2	1.9	1.0	2.2	9.0	6.6
1944	1.9	2.4	2.1	1.1	2.5	10.0	7.2
1945	2.2	2.8	2.7	1.2	2.8	11.7	8.3
1946	3.3	3.5	3.7	1.5	3.8	15.8	9.1
1947	3.9	4.1	4.9	1.9	5.1	19.9	9.3
1948	4.4	4.4	5.9	2.4	6.1	23.2	9.1
1949	4.8	4.5	6.4	3.2	7.0	25.9	9.6
1950	5.1	4.7	6.5	3.2	7.8	27.2	9.3

Source: Unemployment Compensation Commission of Montana.

Table 49
RATIO OF BENEFIT PAYMENTS TO TAXABLE WAGES UNDER MONTANA UNEMPLOYMENT COMPENSATION LAW, SERVICE INDUSTRIES, FISCAL YEARS, 1943 - 1950

Fiscal Year	Hotels & Rooming Houses	Personal Services	Business & Repair Services	Motion Pictures & Amusements	Professional & Social Services	Total
1942-43	.67	.23	.17	.21	.20	.29
1943-44	.17	.08	.06	.07	.08	.09
1944-45	.14	.09	.05	.11	.04	.08
1945-46	.93	.46	.38	.58	.23	.49
1946-47	1.18	.73	.29	.50	.31	.59
1947-48	1.28	.96	.25	.66	.41	.68
1948-49	1.48	1.08	.35	.69	.26	.73
1949-50	3.26	1.93	.92	1.35	.57	1.52
Ratio for 8-Year Period	1.44	.84	.39	.69	.32	.71

Source: Unemployment Compensation Commission of Montana.

business services have been very low, 0.32 and 0.39 percent respectively. The ratio for all covered service industries for the eight-year period was 0.71 percent.

Outlook

As long as personal disposable income remains at a fairly high level, the demand for services will continue. Thus the outlook seems to be for continued high employment in the service industries. With the exception of hotels and lodging places, employment in the service industries increased during the last national emergency. This increase probably will not be repeated to the same extent, however, since, contrary to the experience in the late thirties and early forties, the state entered the present emergency with a period of prosperity and high demand for services behind it.

The decline in employment in hotels and lodging places may be repeated if travel is again curtailed.

XI. Transportation, Communication, and Other Public Utilities

Public utilities are estimated to have the highest physical investment per full-time worker of any industry group. The provision of transportation, communication, and other public utility services in an area as large and as sparsely settled as Montana requires a heavy investment per person served as well. Thus this group of industries makes up an important segment of the economy from the standpoint of capital investment as well as services rendered and numbers employed.

The state is served by six major railroad systems, several truck, bus and airlines, and telephone and telegraph facilities. However, aside from a freight rate problem which requires extensive investigation, attention given the state's public utilities is usually focused upon hydroelectric power. Practically all of the power generated in Montana is hydroelectric; the state has vast potentialities as yet undeveloped.

According to the Federal Power Commission, net generation of power in Montana in 1950, highest year on record, represented an increase of 94.4 percent over 1929 and of 99.3 percent over 1939. Private utility companies produced 89.3 percent of all power generated in 1950; public projects such as the REA and other cooperative power districts accounted for the remaining production.

The production of power in Montana has been based upon and is largely dependent upon the requirements of the mining industry. In 1946, 55.7 percent of all power generated in the state was used for industrial purposes, compared to 59.9 percent for the United States as a whole. Of the total power used by industry in Montana, 83.9 percent was utilized in the production of nonferrous metals and their products, including extraction. Because of its heavy dependence upon one industry, power generation and consumption in Montana has tended to fluctuate somewhat more sharply than has total United States production.[1]

Employment and Wages

Covered employment figures fail to show the full importance of the various public utilities industries to the state because of the omission of interstate railroad employees, whose unemployment coverage is under the Railroad Retirement Act. In 1950, average total employment in transportation, communication, and other utilities amounted to 22,000 or 14.9 percent of total nonagricultural employment; average covered employment in the same industries (excluding interstate railroads) numbered only 7,700 or 7.6 percent of total covered employment.

Transportation companies other than interstate railroads employ the largest number of workers in the covered group, followed by "other utilities" (electric power, gas, and water companies) and "communication" (telephone and telegraph).

The 1950 figures represent an increase of 45.7 percent in employment in all utilities and 42.6 percent in covered utilities since 1939. Covered employment in utilities has followed the pattern of total covered employment closely during the past twelve years. Total employment in utilities has been less subject to fluctuations, due to the inclusion of railroad workers. During the war, employment in covered utilities declined while

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[1] See Chart 7.

Table 50
AVERAGE EMPLOYMENT IN TRANSPORTATION, COMMUNICATION, AND OTHER PUBLIC UTILITIES IN MONTANA, 1939 - 1950
(thousands of workers)

Year	Total Transportation and Utilities Employment	Percent of Total Nonag. Employment	Covered Employment[1] Transportation	Covered Employment[1] Communication	Covered Employment[1] Other Utilities	Covered Employment[1] Total	Percent of Total Covered Employment
1939	15.1	14.8	1.7	1.3	2.4	5.4	7.9
1940	15.3	14.2	1.7	1.2	2.6	5.5	7.5
1941	16.1	14.3	2.0	1.3	2.6	5.8	7.5
1942	17.4	15.0	2.2	1.4	2.3	5.8	7.4
1943	20.2	16.8	2.3	1.4	2.0	5.7	7.7
1944	20.9	18.4	2.2	1.4	1.8	5.4	7.5
1945	21.3	18.8	2.3	1.4	1.9	5.6	7.8
1946	21.5	17.1	2.7	1.6	2.2	6.4	7.7
1947	22.2	16.3	2.9	1.9	2.3	7.1	7.7
1948	22.1	15.4	3.1	2.0	2.5	7.5	7.6
1949	21.7	15.0	3.0	2.1	2.5	7.6	7.7
1950	22.1	14.9	3.1	2.1	2.5	7.7	7.6

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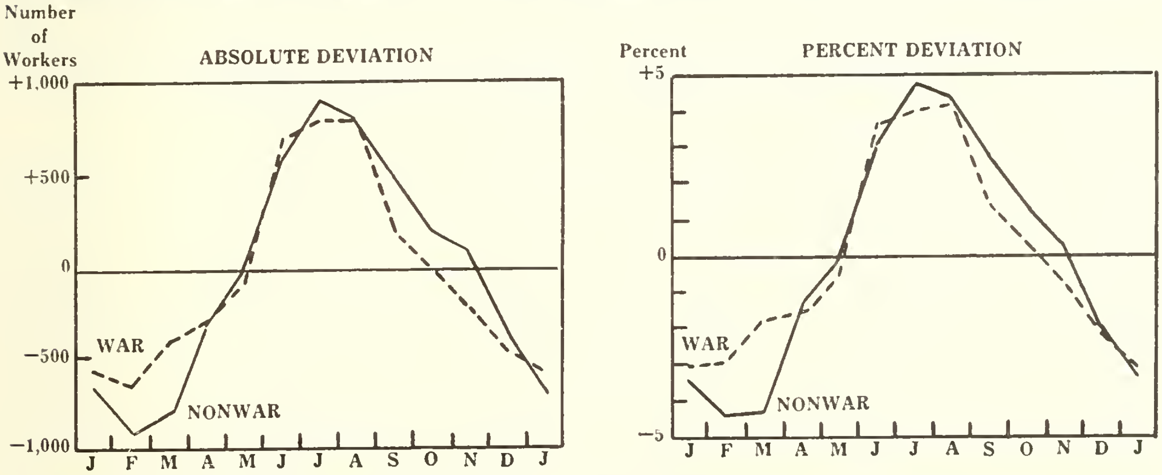
[1] Excludes interstate railroads.

Source: Unemployment Compensation Commission of Montana.

railroad employment increased steadily until 1947. In 1945, employment in all utilities amounted to 18.8 percent of total nonagricultural employment. Since the war, employment in the covered segment of the industry group has increased while employment in all utilities has declined. The increase has been fairly evenly distributed among the covered industries and the decline has come in the railroads.

Employment in transportation and utilities is less seasonal than in any major industry group except mining and government. Total employment

Chart 29
TYPICAL SEASONAL VARIATION OF EMPLOYMENT IN TRANSPORTATION, COMMUNICATION, AND OTHER PUBLIC UTILITIES IN MONTANA, NONWAR AND WAR YEARS, 1940-1949

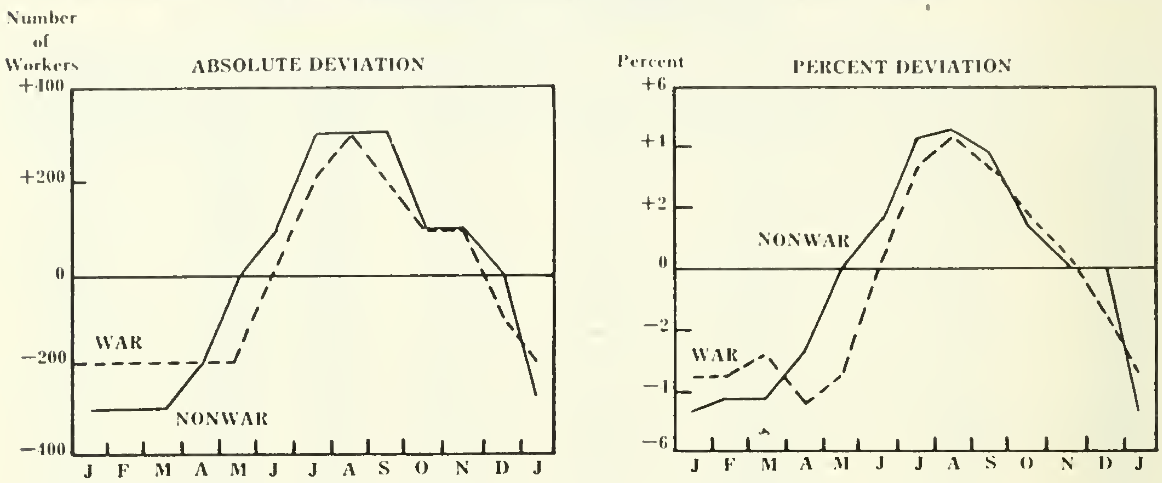


Note: Nonwar years=1940, 1941, and 1946-1949. War years=1942-1945. Zero line represents average employment during each period.

Source: Unemployment Compensation Commission of Montana.

Chart 30

TYPICAL SEASONAL VARIATION OF COVERED EMPLOYMENT IN TRANSPORTATION, COMMUNICATION, AND OTHER PUBLIC UTILITIES IN MONTANA, NONWAR AND WAR YEARS, 1940-1949



Note: Nonwar years=1940, 1941, and 1946-1949. War years=1942-1945. Zero line represents average employment during each period.

Source: Unemployment Compensation Commission of Montana.

in transportation and utilities (including interstate railroads) has varied during a typical nonwar year since 1939 by about 1,800 workers, or has fluctuated from about 4.4 percent below to 4.7 percent above employment during the average month. During World War II, from 1942 to 1945, the seasonal variation in employment was smaller, amounting to 1,500 workers, or a swing from 3.1 percent below to 4.1 percent above the average month. Although fluctuations in terms of number of workers

Table 51

TOTAL WAGES PAID TO COVERED WORKERS IN TRANSPORTATION, COMMUNICATION, AND OTHER PUBLIC UTILITIES IN MONTANA, 1939 - 1950

(millions of dollars)

Year	Transportation[1]	Communication	Other Utilities	Total	Percent of Total Covered Wages
1939	2.2	1.7	4.3	8.2	9.1
1940	2.3	1.7	4.6	8.6	8.5
1941	2.6	1.8	4.8	9.2	8.4
1942	3.4	2.0	4.7	10.1	7.8
1943	4.0	2.3	4.4	10.7	7.8
1944	4.3	2.4	4.4	11.1	8.0
1945	4.6	2.6	4.7	11.9	8.5
1946	5.9	3.6	5.6	15.1	8.7
1947	7.2	4.4	6.5	18.1	8.4
1948	8.2	5.0	7.6	20.8	8.1
1949	8.7	5.4	8.4	22.5	8.4
1950	9.3	5.6	8.9	23.8	8.2

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[1] Excludes interstate railroads.

Source: Unemployment Compensation Commission of Montana.

have been much smaller in covered utilities (about 600 during the nonwar years since 1939 and 500 during the war) percentage variations were very similar, from approximately 4.5 percent below the average to 4.5 percent above in each case. All three groups of covered utilities workers follow about the same seasonal pattern with the same magnitude of fluctuations.

Total wages paid to covered workers in transportation, communication, and other public utilities almost tripled between 1939 and 1950 and in that year amounted to $23.8 million or 8.2 percent of total covered wages.

Benefit payments to covered utilities workers have been considerably below the average, reflecting the stability of employment in these industries, and amounting to only 0.29 percent of taxable wages between the fiscal years 1943 and 1950.

The Outlook

Total employment in public utilities has increased steadily during the postwar years and may continue to do so. Employment for the first half of 1951 was above that for the same period in 1950. Most of the increase took place in railroad employment, as the result of increased tonnage due to the Korean War, and in electric utilities where considerable construction activity was taking place. As the national defense program is accelerated, further increases in railroad employment may be anticipated. The rise in covered utilities employment is not likely to be as large, and if all-out war should develop, employment may decline as it did during World War II.

The completion of two major dam projects now under construction in the state, Hungry Horse with an installed capacity of 285,000 kilowatts and Canyon Ferry, 50,000 kilowatts, will increase the capacity of generating plants in Montana by about 75 percent. Hungry Horse Dam will increase the firm power capacity of Kerr and Thompson Falls dams downstream as well. The operation of the dams and the maintenance of power lines will result in an increase in employment in electric utilities, but the workers, as government employees, will not be covered by unemployment insurance.

Table 52

RATIO OF BENEFIT PAYMENTS TO TAXABLE WAGES UNDER MONTANA UNEMPLOYMENT COMPENSATION LAW, TRANSPORTATION, COMMUNICATION, AND OTHER PUBLIC UTILITIES, FISCAL YEARS, 1943-1950

Fiscal Year	Transportation[1]	Communication	Other Utilities	Total
1942-43	.05	.04	.11	.07
1943-44	.03	.04	.08	.05
1944-45	.02	.02	.02	.02
1945-46	.44	.08	.21	.27
1946-47	.22	.15	.15	.18
1947-48	.28	.29	.20	.25
1948-49	.31	.22	.39	.32
1949-50	.96	.52	.75	.78
Ratio for 8-Year Period	.34	.22	.28	.29

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[1] Excludes interstate railroads.

Source: Unemployment Compensation Commission of Montana.

XII. Finance, Insurance, and Real Estate

With no large centers of commerce or finance located in Montana, its financial institutions are predominantly small and local in character. The majority of its banks are country banks serving agricultural communities. With the exception of one life insurance company and several branch offices, Montana's insurance and real estate establishments also serve primarily local needs.

Employment and Wages

Employment in finance, insurance, and real estate is small, with a yearly average of 3,900 covered workers in 1950. Its record is one of steady increase, more than doubling since 1939. The group accounted for 3.9 percent of total covered employment in 1950, compared to 2.8 percent in 1939[1].

Seasonal fluctuations in employment in the finance industries are very small. In the average nonwar year during the past decade, employment has varied by about 200 workers from the low in February and March to the high during the summer months of June, July, and August. During the war, (1942-1945) fluctuations amounted to only 100 workers, with two lows, in February and in November and December. The summer peak was eliminated, partly because of the decline in real estate activity during the war.

Wage rates in the finance industries are somewhat lower than average, probably because of the large number of women workers. In 1950, wages paid to covered workers amounted to 3.6 percent of total covered wages, while 3.9 percent of covered employees were at work in these industries.

The ratio of benefits to taxable wages in finance, insurance, and real

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[1] Comparisons between 1939 and 1950 are not strictly valid, because of the fact that national bank employees were not covered until 1941.

Table 53
AVERAGE COVERED EMPLOYMENT IN FINANCE, INSURANCE, AND REAL ESTATE IN MONTANA, 1939-1950
(thousand of workers)

Year	Employment	% of Total Nonagricultural Employment	% of Total Covered Employment
1939[1]	1.9	1.9	2.8
1940[1]	2.4	2.2	3.3
1941	2.6	2.2	3.2
1942	2.6	2.2	3.3
1943	2.6	2.3	3.5
1944	2.7	2.4	3.8
1945	2.9	2.6	4.0
1946	3.2	2.5	3.8
1947	3.4	2.5	3.7
1948	3.6	2.5	3.7
1949	3.7	2.6	3.7
1950	3.9	2.6	3.8

[1] Not strictly comparable with following years.

Source: Unemployment Compensation Commission of Montana.

Table 54

TOTAL WAGES PAID TO COVERED WORKERS IN FINANCE, INSURANCE, AND REAL ESTATE IN MONTANA, 1939-1950

(millions of dollars)

Year	Wages	% of Total Covered Wages
1939[1]	3.6	4.0
1940[1]	3.7	3.7
1941	4.0	3.6
1942	4.0	3.1
1943	4.0	2.9
1944	4.6	3.3
1945	5.1	3.6
1946	6.3	3.6
1947	7.4	3.4
1948	8.4	3.3
1949	9.3	3.5
1950	10.4	3.6

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[1] Not strictly comparable with following years.

Source: Unemployment Compensation Commission of Montana.

estate is the lowest for any industry group. Between the fiscal years 1943 and 1950, only 0.23 percent of taxable wages were paid as benefits to unemployed workers in these fields.

The Outlook

The steady growth and stabilized employment which has characterized the finance industries in the past may be expected to continue, limited, however, by the population growth and by the degree of industrialization of the state. To the extent that employment in these industries increases, it will tend to have a stabilizing influence on the total employment pattern.

Table 55

RATIO OF BENEFIT PAYMENTS TO TAXABLE WAGES UNDER MONTANA UNEMPLOYMENT COMPENSATION LAW, FINANCE, INSURANCE, AND REAL ESTATE, FISCAL YEARS, 1943-1950

Fiscal Year	Ratio	Fiscal Year	Ratio
1942-43	.10	1946-47	.22
1943-44	.04	1947-48	.26
1944-45	.05	1948-49	.27
1945-46	.18	1949-50	.45
Ratio for 8-Year Period			.23

Source: Unemployment Compensation Commission of Montana.

XIII. Government

The past two decades have seen a widespread expansion of government services and functions. As a result, the number of government employees has increased substantially.

Montana has a higher percentage in government employment than has the United States as a whole, due in part to its relatively small population and large area. Over three-fourths of all government employees in Montana are in state, county, and local employment. The importance of agriculture, forestry, reclamation, and wild life in the state economy, all of which are served on behalf of the public, tends to increase the volume of government employment.

Government workers are not covered by unemployment insurance, but their number is large enough to constitute an important part of the economy and to exert a stabilizing influence on total nonagricultural employment. In Montana, since 1939, government employment has increased 28.2 percent, numbering 27,300, or 18.5 percent of total nonagricultural employment in 1950. In 1939, however, government employees accounted for 20.9 percent of nonagricultural employment.

Government employment in Montana is the least seasonal of any major occupational group, with variations of from 1.5 percent below to 3.3 percent above the average month, or about 1,000 workers, in the typical nonwar year between 1939 and 1949 and somewhat wider fluctuations of from 2.8 percent below to 5.7 percent above the average, or approximately 2,000 workers, during the war years. The pattern differs from most nonagricultural employment with July and August as the low months and December the high. The December peak is brought about almost entirely by an increase in federal employment in the post offices to take care of the Christmas mail. With the exception of this sharp increase, government employment fluctuates very little during a typical year.

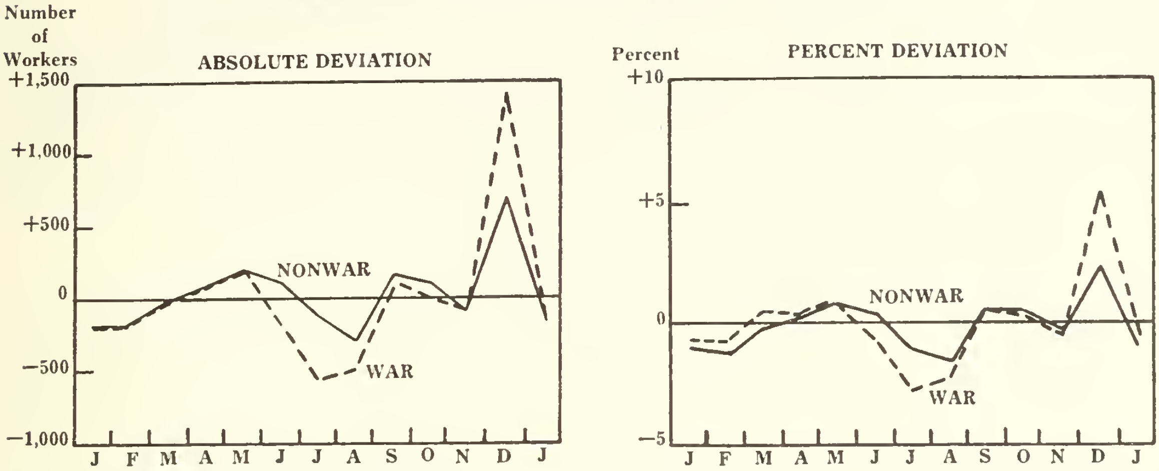
Table 56

AVERAGE FEDERAL, STATE, AND LOCAL GOVERNMENT EMPLOYMENT IN MONTANA, 1939-1950

Year	Employment	% of Total Nonagricultural Employment
1939	21.3	20.9
1940	21.5	20.0
1941	22.2	19.8
1942	22.9	19.8
1943	23.3	20.3
1944	23.1	20.4
1945	22.9	20.2
1946	24.7	19.6
1947	24.6	18.0
1948	25.7	17.9
1949	26.9	18.6
1950	27.3	18.5

Source: Unemployment Compensation Commission of Montana.

Chart 31
TYPICAL SEASONAL VARIATION OF EMPLOYMENT IN GOVERNMENT IN MONTANA, NONWAR AND WAR YEARS, 1940-1949



Note: Nonwar years=1940-1941, and 1946-1949. War years=1942-1945. Zero line represents average employment during each period.

Source: Unemployment Compensation Commission of Montana.

The Outlook for Government Employment

The level of government employment may fluctuate somewhat with the adoption of new laws and with administrative requirements. It is unlikely, however, that future changes will curtail government services to any great extent. Government employment, therefore, will continue to constitute a sizeable portion of nonagricultural employment in Montana, although as other segments of the economy increase more rapidly it may decline further in relative importance.

XIV. The Tourist Industry

The term "tourist industry" represents a composite of all those businesses which supply goods and services for travelers. It includes hotels, tourist cabins, dude ranches, eating and drinking places, transportation facilities, filling stations, souvenir shops, guide facilities, outfitters, various amusements and many other businesses which cater to some degree to the tourist business. Such an industry is very difficult to measure accurately, not only because of the variety of enterprises involved but because of the differing proportions of goods sold or services performed attributable to the tourist trade.

Nevertheless, the importance of the tourist industry to Montana should not be overlooked. The dollars spent by travelers in the state benefit many segments of the economy and add directly to income and employment. The Montana State Highway Commission estimates, on the basis of data cards filled in by tourists visiting the state, that tourist income amounted to about $70,727,300 in 1950. Some indication of the increased employment which results from tourist business may be obtained from monthly figures for industries such as hotels, tourist camps, eating and drinking places, and filling stations, which show substantial seasonal employment increases during the summer months.[1]

The tourist industry is sensitive to general business conditions throughout the country, to a greater degree than some of Montana's more basic industries. It is also subject to curtailment during an ex-

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[1] For discussions of these industries, see the trade and service chapter.

Table 57

ESTIMATED TOTAL NUMBER OF TOURISTS AND EXPENDITURES IN MONTANA, 1935-1950

Year	Tourists	Expenditures (thousands of dollars)
1935	1,296,000	25,551.2
1936	1,413,750	30,293.4
1937	1,333,721	27,677.2
1938	1,125,000	27,000.0
1939	1,016,000	23,367.0
1940	1,726,950	28,650.1
1941	1,774,782	29,737.7
1942	1,107,690	16,094.7
1943	687,600	8,938.8
1944	652,068	6,520.7
1945	1,097,735	16,466.0
1946	2,057,399	53,862.0
1947	----------	54,077.6
1948	1,871,430	59,885.8
1949	2,122,028	65,294.9
1950	2,403,353	70,727.3

Source: State Highway Commission of Montana.

tended national emergency if shortages of gasoline and rubber exist. Disregarding this possibility, the outlook for the tourist business is good.

Montana has great possibilities for expansion of its tourist trade. Many natural attractions, national and state parks, good fishing and hunting are available to the visitor. Transportation accommodations by rail, air, and highway enable the vacationist to reach most of his objectives easily. Well-planned promotional effort, together with preparations for accommodating larger numbers of visitors should result in greater tourist revenue and increased employment in those industries catering to vacationists.

APPENDIX

Estimating Montana's Labor Force

The Labor Force on April 1, 1950

The problem of estimating Montana's labor force on April 1, 1950 resolved itself into two parts: the number of nonagricultural workers and their segregation into components within their respective industries, and the number of agricultural workers.

For the nonagricultural labor force, the approach used was a comparison of the number of wage and salary workers on April 1, 1940 and April 1, 1950, as estimated by the Unemployment Compensation Commission of Montana. (Table A.) The ratio which the 1950 workers bear to the 1940 workers in each of the industry groups was then multiplied by the 1940 Census labor force figures for Montana to arrive at an estimated April 1, 1950 labor force figure for each industry group.

Table B presents the method of arriving at the agricultural labor force in Montana on April 1, 1950. The best available data for making the estimate consisted of Census figures on the average number of family and hired workers per farm on April 1, 1940 and January 1, 1945 and sample figures from the U. S. Department of Agriculture, Office of the Agricultural Statistician, Helena, Montana, for April 1, 1940, January 1, 1945, and April 1, 1950. First, the ratios of the 1945 Census data to the 1940 Census data were compared to the ratios of the sample data for 1945 and 1940 and were found to be very similar. Having thus established the reliability of the sample data, the ratios of the 1950 to the 1940 sample figures were calculated. The 1940 Census figures on workers per farm were then multiplied by these ratios to obtain comparable April 1, 1950 estimates. By multiplying the average number of family and hired workers per farm in 1950 arrived at by this method by the number of farms in Montana on April 1, 1950 (35,000), estimates of 42,300 family workers and 10,800 hired workers were obtained.

Table 7 in the labor force chapter includes the 1950 labor force estimates with the U. S. Census data for the years 1910, 1920, 1930, and 1940. Some adjustments were made to make the data comparable. For 1910 and 1920, 5,580 and 10,494 persons reported as "clerical workers" were prorated among the various nonagricultural groups, excluding government. In 1930 and 1940, 5,023 and 2,375 workers with "industry not specified" were similarly allocated. The 27,200 estimated government workers in 1950 were reclassified into the various industry groups by applying the ratio of government workers in each group and in the government group itself in 1940.

Annual Labor Force, Employment, and Unemployment Estimates

Annual estimates on average labor force, total employment, and unemployment from 1940 to 1950 are presented in Table C. The unemployment figures for each year represent the difference between estimated total employment and the estimated labor force. Every effort has been made to perfect these estimates. However, because of the incomplete data available, particularly with reference to agricultural and self-employment, they should be treated only as rough approximations.

Table A

METHOD OF ESTIMATING THE NONAGRICULTURAL LABOR FORCE, MONTANA, APRIL 1, 1950

(thousands of workers)

	UCC Estimates of Wage and Salary Workers April 1, 1940		UCC Estimates of Wage and Salary Workers April 1, 1950		Ratio of 1950 to 1940 UCC Data (percent)		Labor Force, Census Data April 1, 1940[1]		Estimated Labor Force, April 1, 1950 (Col. 4 x Col. 3)	
Mining	11.4		10.0		87.7		13.5		11.8	
Contract Construction	4.2		7.7		183.3		6.1		11.2	
Manufacturing	11.6		16.2		139.7		13.7		19.1	
Transportation, Communication, and Other Public Utilities	14.6		20.8		142.5		14.4		20.5	
Trade	24.3	33.9	35.0	53.1	144.0	156.6	29.2	52.0	45.7	81.4[2]
Service and Miscellaneous	9.6		18.1		188.5		22.8		35.7	
Finance, Insurance, and Real Estate	2.3		3.8		165.2		3.4		5.6	
Government			27.2						27.2	
Estimated Total Nonagricultural Labor Force									176.8	

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[1] Census data adjusted by removing all government workers from other industry classifications in order to make Unemployment Compensation Commission and Census data comparable.

[2] Trade and service and miscellaneous have been estimated as a unit and then allocated to their separate classifications on the basis of their relative importance in the 1940 Census.

Table B
METHOD OF ESTIMATING THE AGRICULTURAL LABOR FORCE, MONTANA, APRIL 1, 1950

Ave. No. of Workers per Farm	Census Data April 1, 1940	Census Data Jan 1, 1945	Ratio of 1945 to 1940 Census Data (percent)
Family	1.24	1.31	105.6
Hired	.32	.27	84.4
Total	1.56	1.58	101.3

Ave. No. of Workers per Farm	Sample Data[1] April 1, 1940	Sample Data[1] Jan. 1, 1945	Ratio of 1945 to 1940 Sample Data (percent)	Sample Data[1] April 1, 1950	Ratio of 1950 to 1940 Sample Data (percent)
Family	1.59	1.69	106.3	1.55	97.5
Hired	.54	.48	88.9	.52	96.3
Total	2.13	2.17	101.9	2.07	97.2

Since the average number of workers per farm based on the Census data and the sample data yield approximately the same relative change between 1940 and 1945, the ratio of 1950 to 1940 sample data is used as the basis for estimating total farm workers in 1950:

	Census Data April 1, 1940		Ratio of 1950 to 1940 Sample Data (percent)		Ave. No. of Workers per Farm, April 1, 1950		No. of Farms, April 1, 1950[2]		Total No. of Agricultural Workers, April 1, 1950
Family	1.24	×	97.5	=	1.209	×	35,000	=	42,300
Hired	.32	×	96.3	=	.308	×	35,000	=	10,800
Total									53,100

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[1] Office of the Agricultural Statistician, Helena, Montana.
[2] U. S. Bureau of the Census.

Table C
ESTIMATED AVERAGE LABOR FORCE, EMPLOYMENT, AND UNEMPLOYMENT, MONTANA, 1940-1950
(thousands of workers)

Year	Labor Force	Employment	Unemployment	Unemployment as Percent of Labor Force: Montana	Unemployment as Percent of Labor Force: United States
1940	226.3	201.2	25.1	11.1	14.6
1941	223.0	204.6	18.4	8.3	9.9
1942	216.6	204.2	12.4	5.7	4.7
1943	201.7	199.9	1.8	.9	1.9
1944	196.5	195.8	.7	.4	1.2
1945	197.9	193.8	4.1	2.1	1.9
1946	218.3	210.8	7.5	3.4	3.9
1947	230.9	225.1	5.8	2.5	3.6
1948	237.8	232.3	5.5	2.3	3.4
1949	245.5	237.2	8.3	3.4	5.5
1950	247.4	235.6	11.8	4.8	5.0

Source: Montana data estimated by Bureau of Business and Economic Research, Montana State University. United States percentages based on data released by the Bureau of the Census.

ALLIED PRINTING TRADES UNION LABEL COUNCIL MISSOULA MONT.
Printed by The University Press
Montana State University